

**NWS- Forecast: MIDDLE TANANA VALLEY- INCLUDING...FAIRBANKS**  
**741 AM ADT FRI APR 11 2008**

**TODAY...**MOSTLY CLOUDY WITH PATCHY MORNING FOG. HIGHS 25 TO 30. LIGHT WINDS. **.TONIGHT...**MOSTLY CLOUDY WITH A CHANCE OF SNOW. LOWS ZERO TO 10 ABOVE. SOUTHWEST WINDS TO 10 MPH.

**SATURDAY...**MOSTLY SUNNY. HIGHS 30 TO 35. SOUTH WINDS TO 10 MPH BECOMING WEST IN THE AFTERNOON. **.SATURDAY NIGHT...**PARTLY CLOUDY. LOWS 10 TO 15. NORTHWEST WINDS TO 10 MPH.

**SUNDAY...**MOSTLY CLOUDY. HIGHS 35 TO 45. EAST WINDS TO 10 MPH. **.SUNDAY NIGHT...**MOSTLY CLOUDY. LOWS NEAR 20.

**MONDAY...**MOSTLY CLOUDY WITH A CHANCE OF SNOW. HIGHS NEAR 40. **.MONDAY NIGHT...**MOSTLY CLOUDY WITH A CHANCE OF SNOW. LOWS NEAR 20.

**TUESDAY...**MOSTLY CLOUDY WITH A CHANCE OF SNOW. HIGHS NEAR 30. **.TUESDAY NIGHT...**MOSTLY CLOUDY. LOWS NEAR 15.

**.WEDNESDAY...**MOSTLY CLOUDY. HIGHS NEAR 35.

WIND(MPS) T(C) TD(C) VIS(KM) WXC1(CODE) TIME=18 DAY=102

SFC OBS, 18:00 UTC, 20080411

-175

-170

-165

1

76

-24

-22 0  
-23

-29 10  
-32

-26  
-23

-16 16  
-21

-23 3  
-25 \*\*

-23 16  
-26

-16 8  
-18

-19 16  
-23

-24 16  
-29

-23 10  
-29

-19 16  
-26

-17 16  
-29

-12 16  
-20

-14 16  
-16

-19 16  
-22

-14 32  
-18

-7 16  
-14

-17 6  
-19

-22 11  
-22

-14 6  
-17

-12 5  
-16

-19 16  
-22

-12 16  
-16 \*\*

-9 16  
-14

-11 11  
-12 16  
-14

-9 16  
-15

-7 32  
-13

-19 4  
-32

-19 3  
-19

-18 16  
-21

-15 16  
-20

-16 32  
-19

-16 40  
-19

-9 16  
-16

-15 6  
-17

-8 16  
-11

-4 16  
-13

-4 48  
-8

-7 16  
-16

140

-17 16  
-19

-7 16  
-16

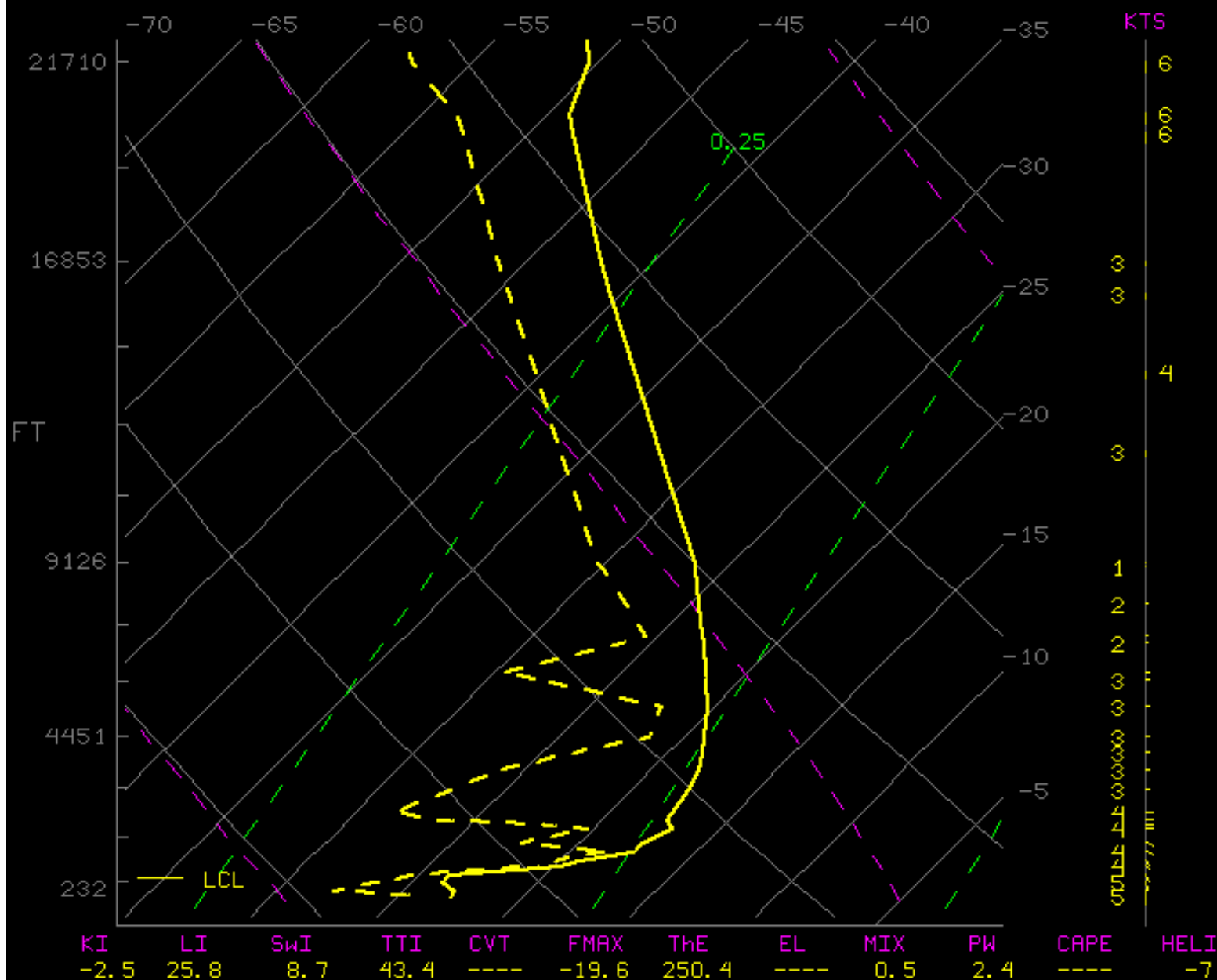
-4 48  
-8

140

1200 UTC 11 Apr 2008102 PABR 70026 Barrow

AK US

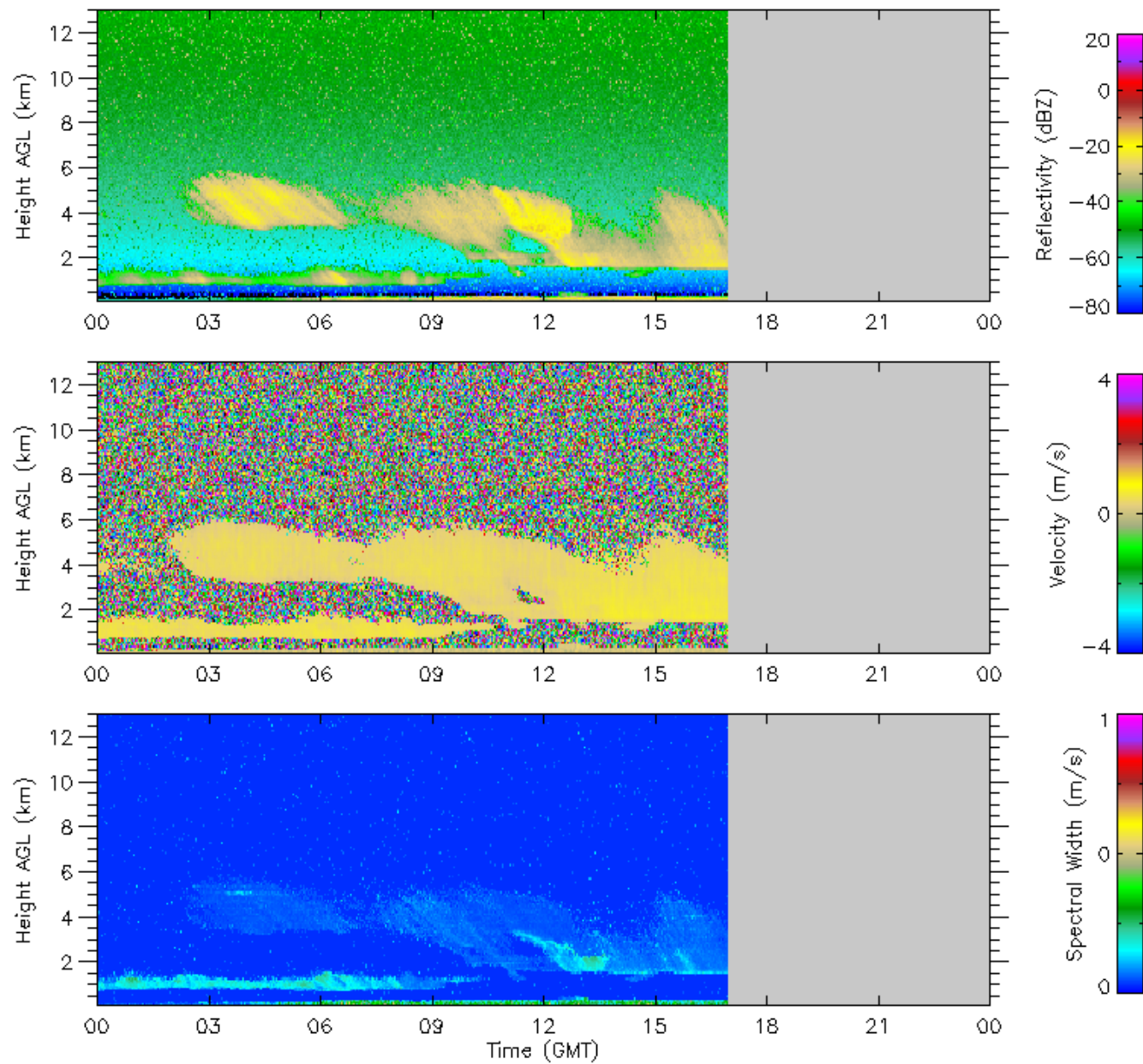
3



McIDAS

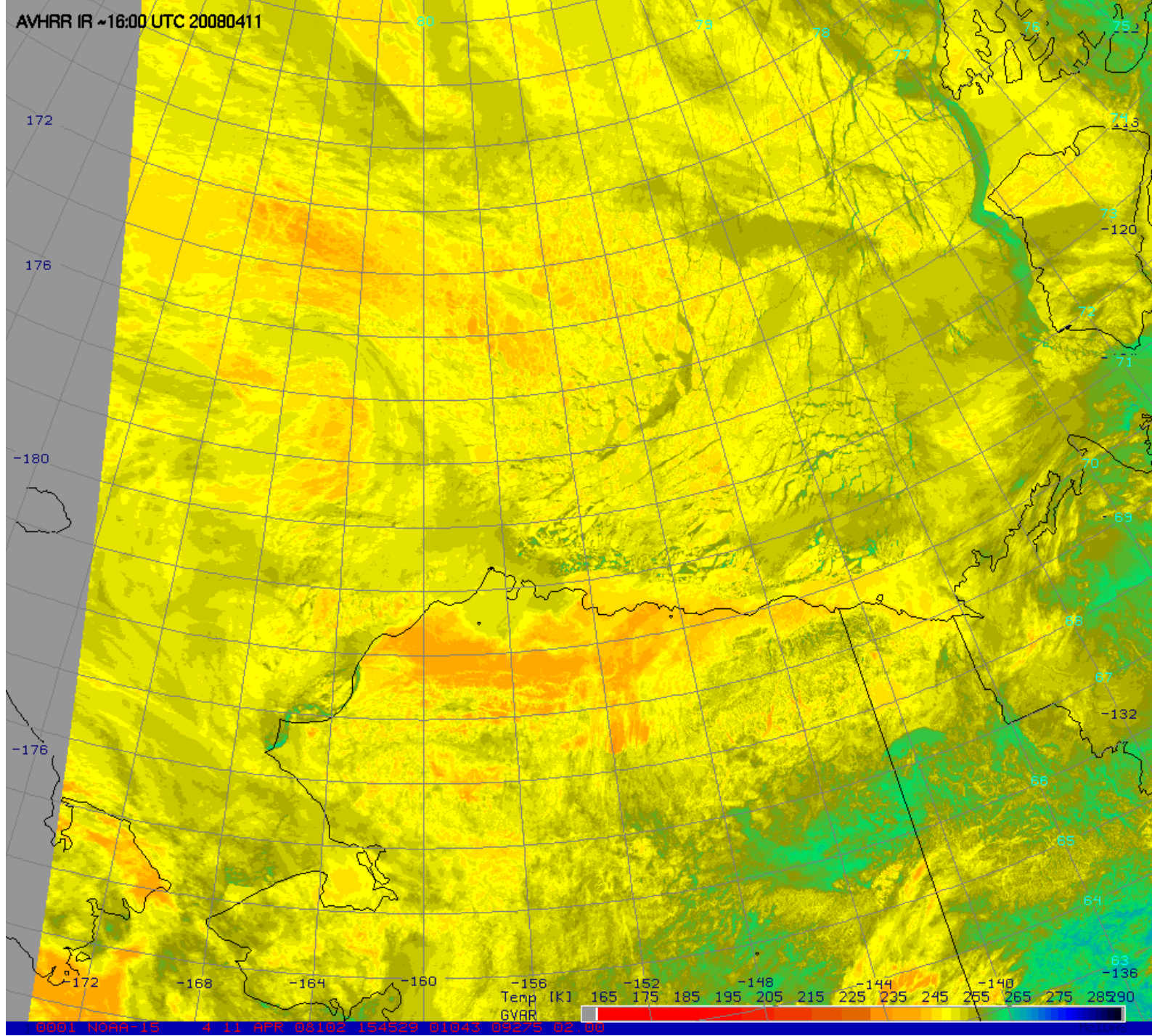
20080411

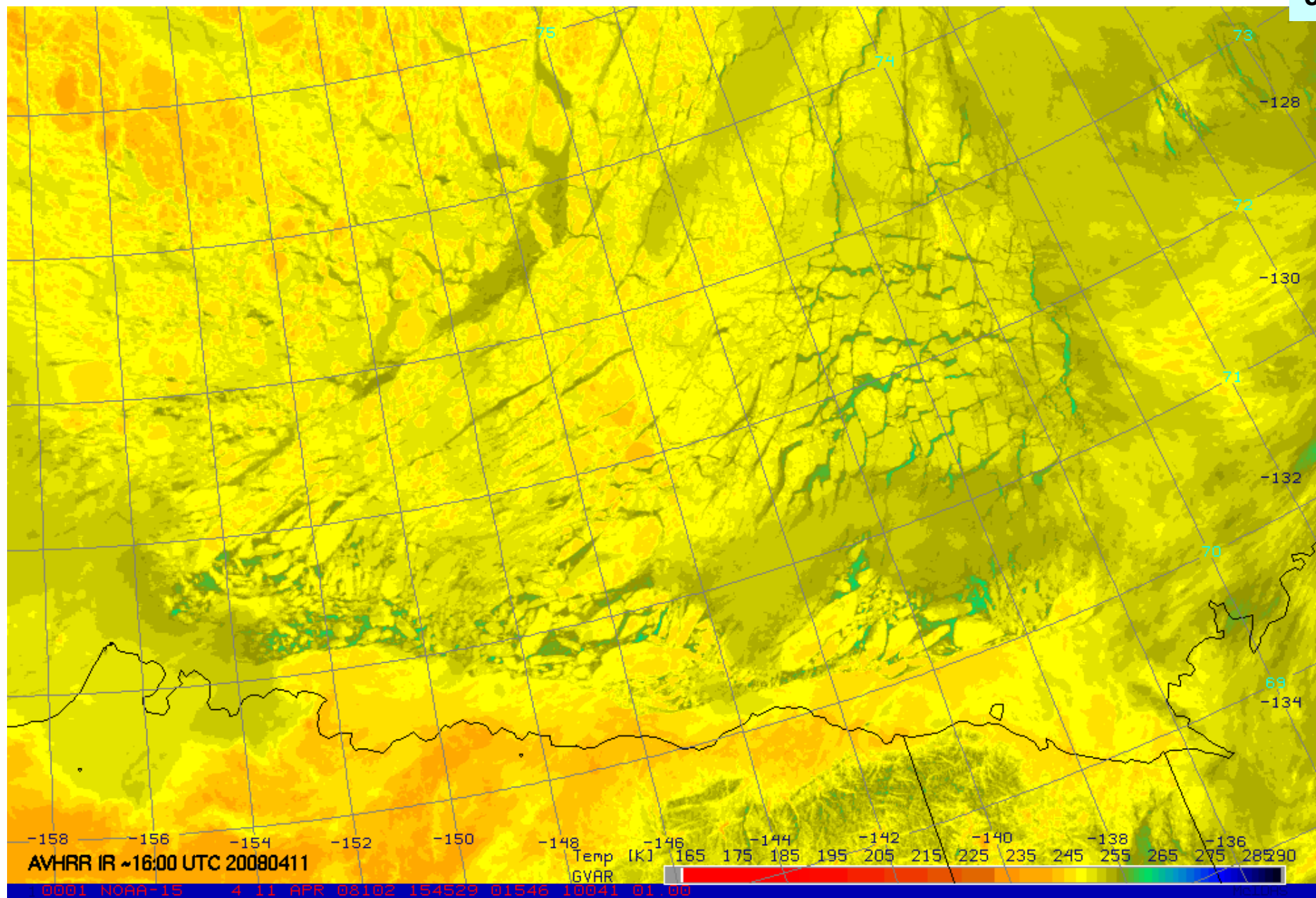
nsammcrmomC1.b1, General, Mode 3



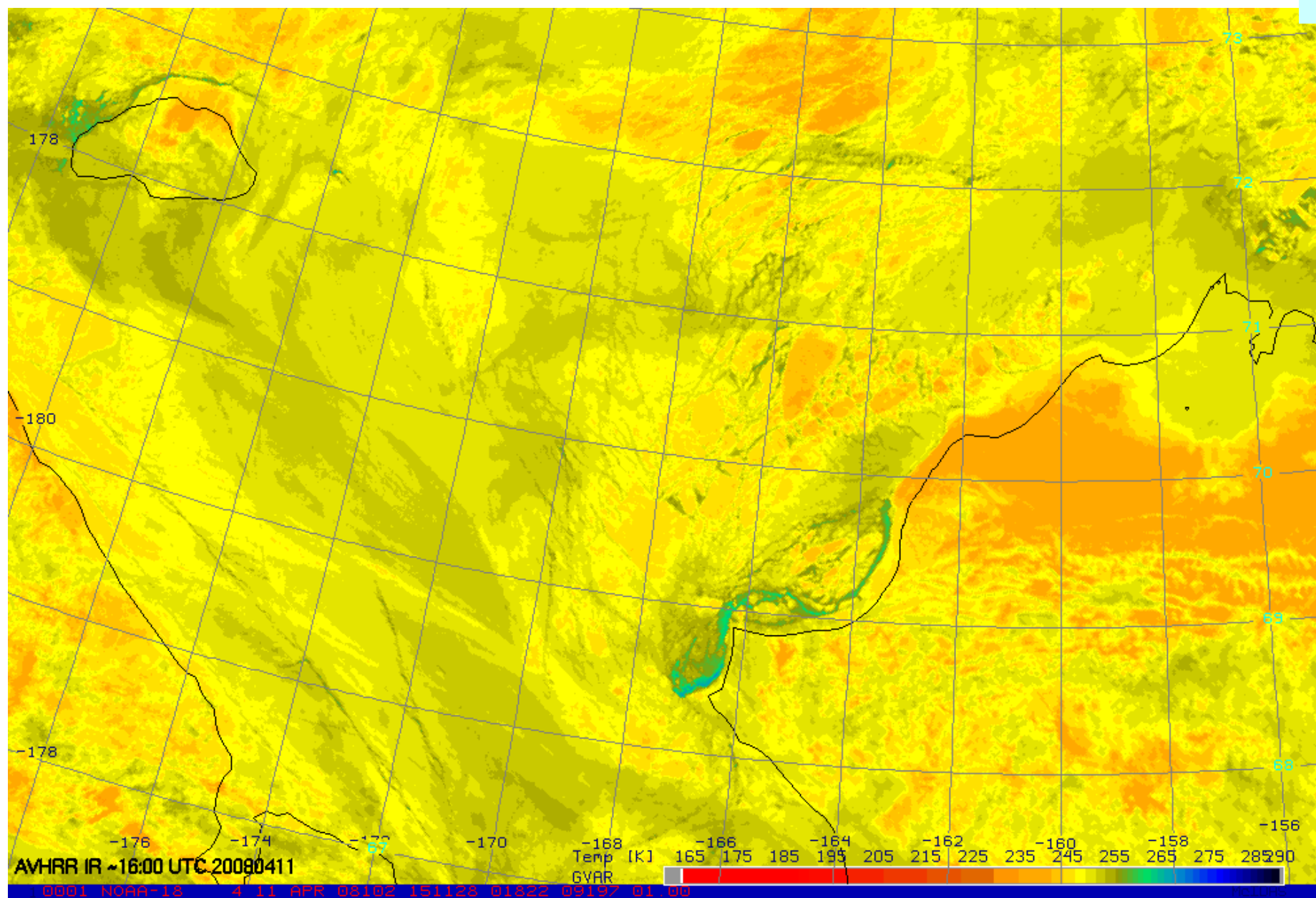


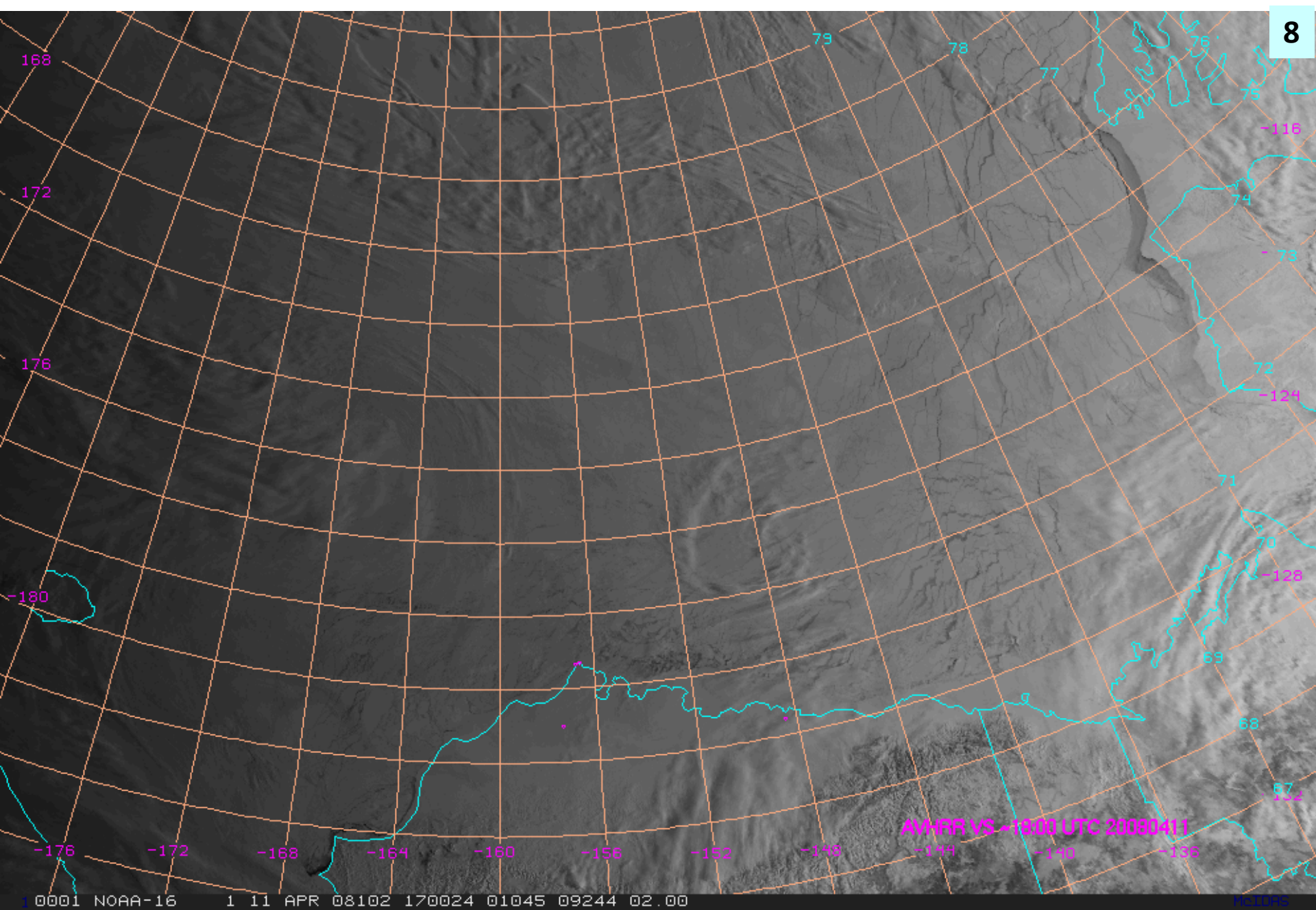
AVHRR IR ~16:00 UTC 20080411



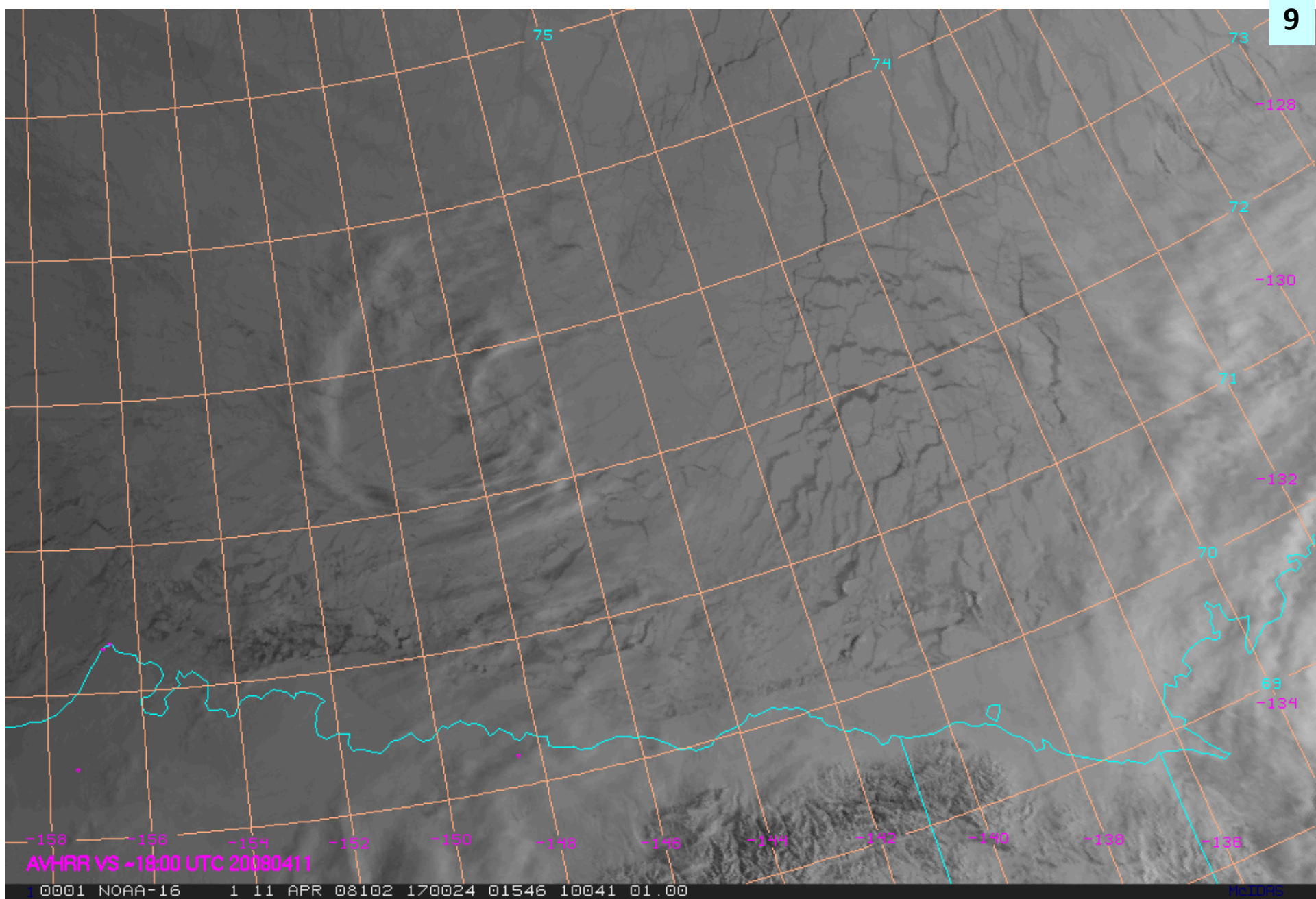


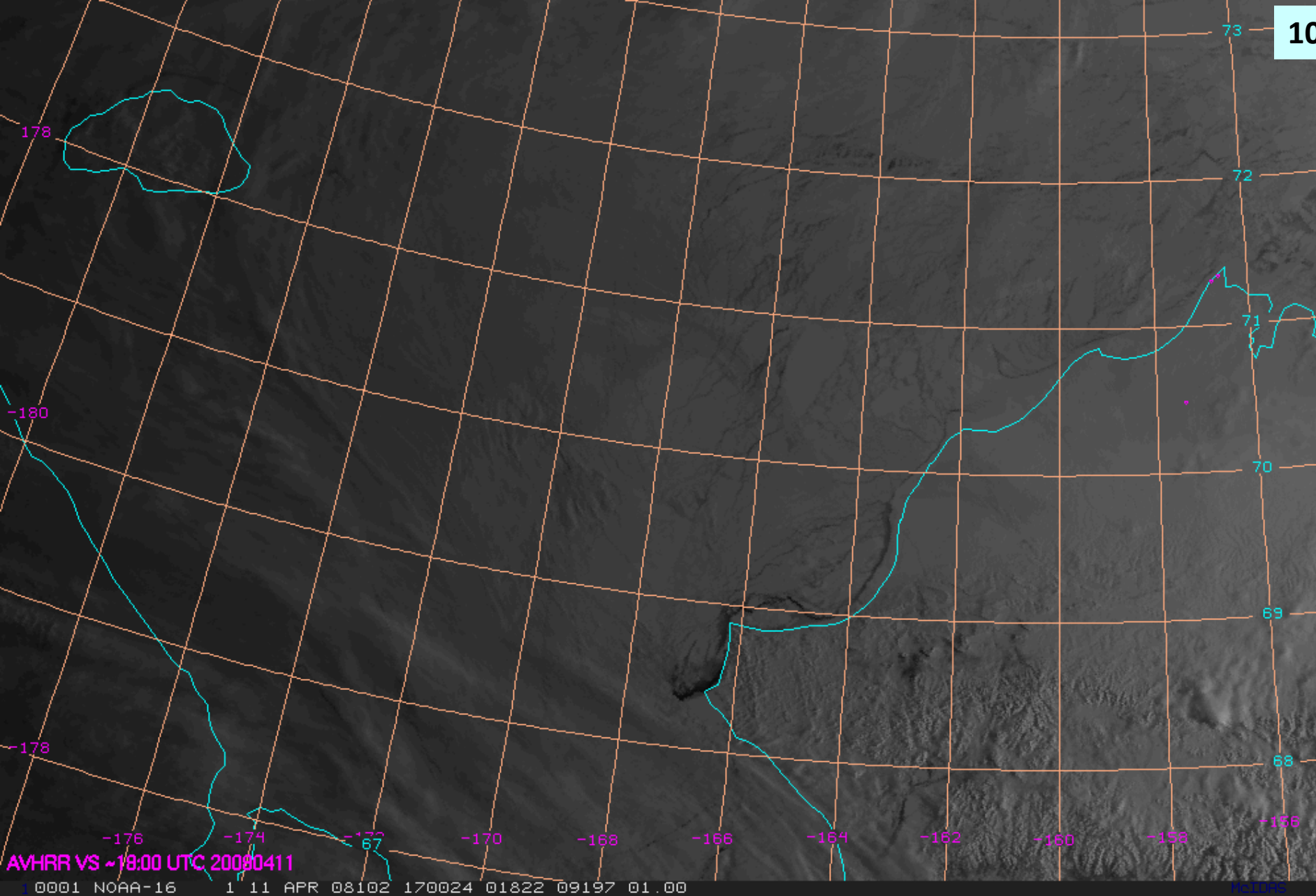




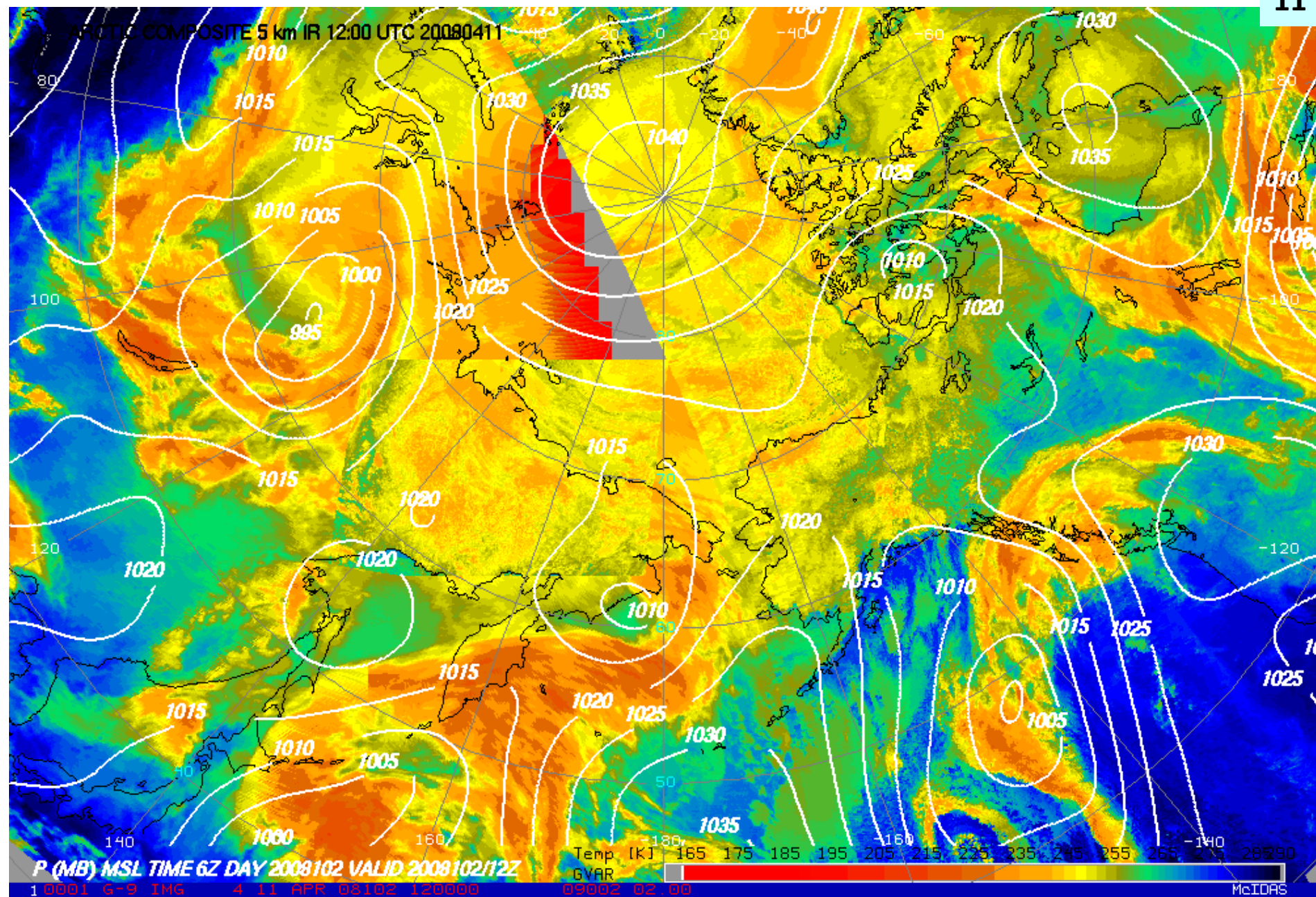




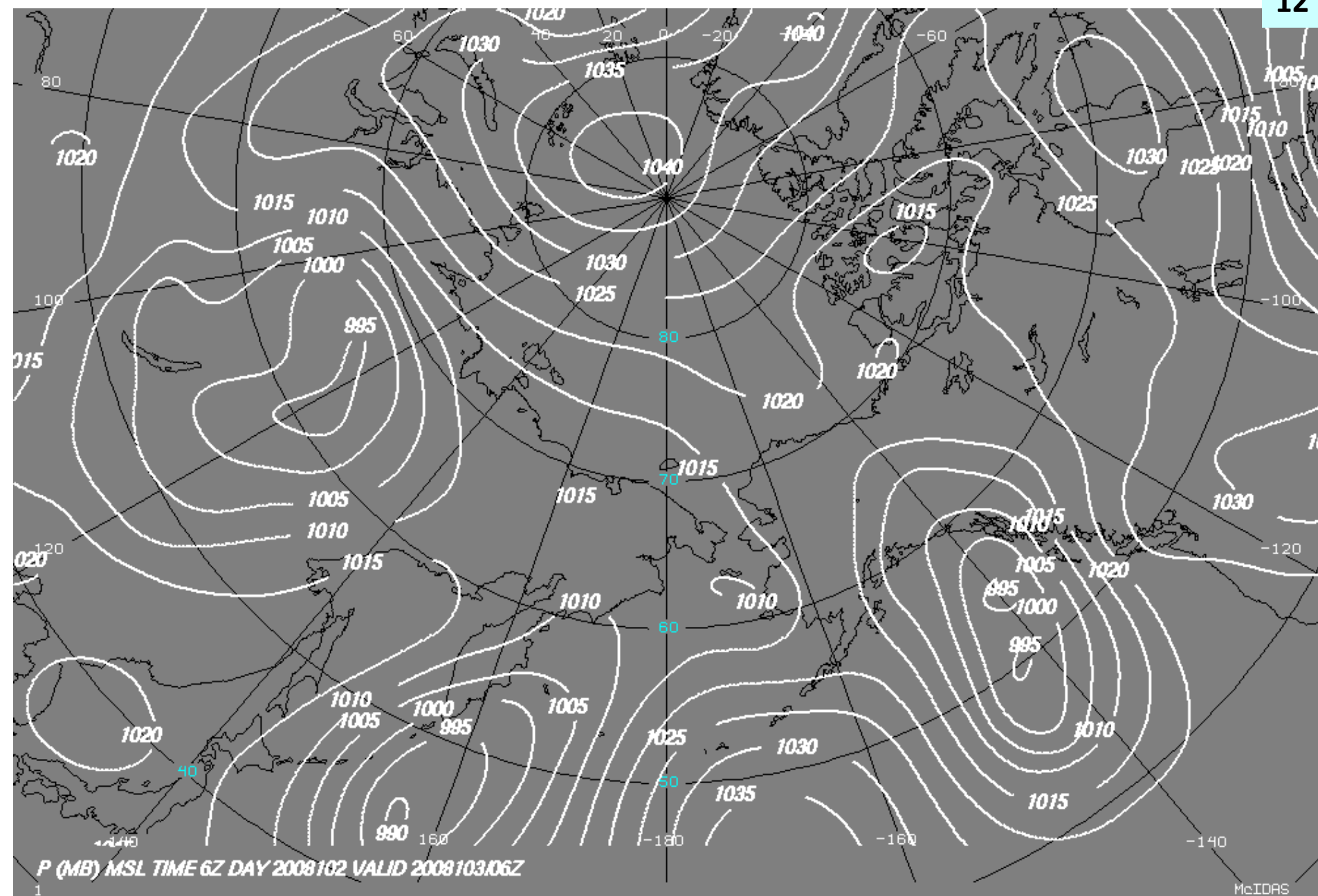


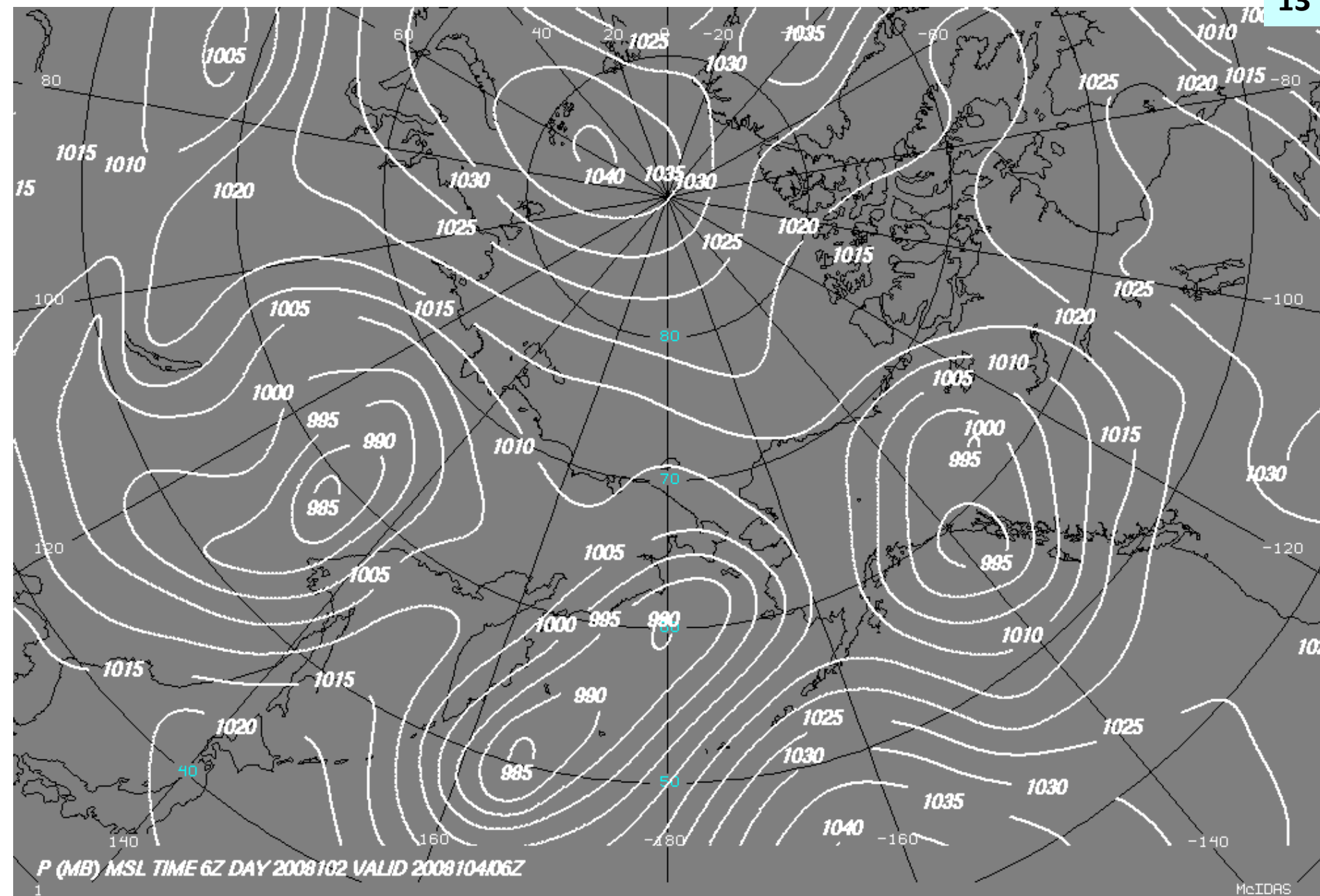




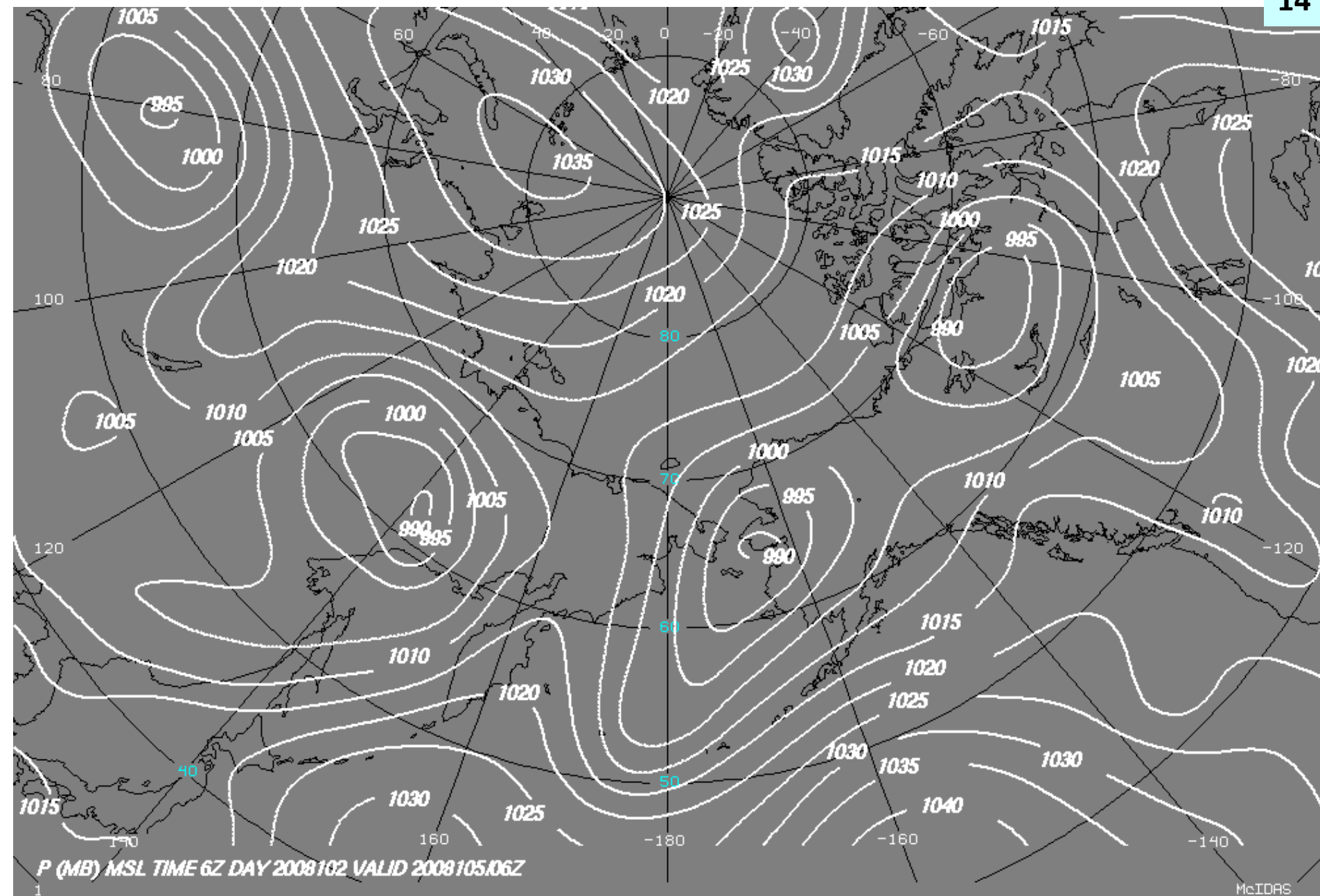




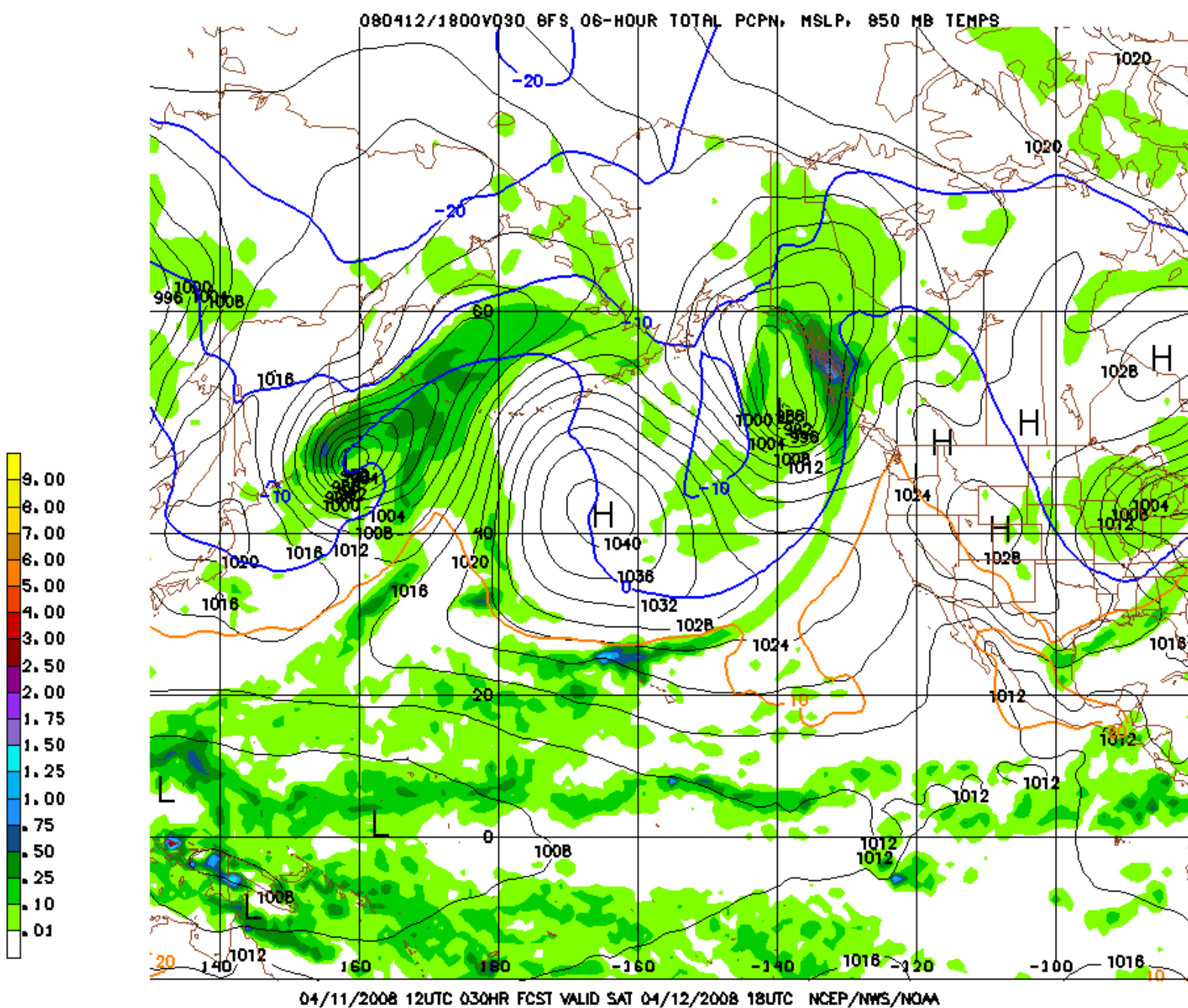


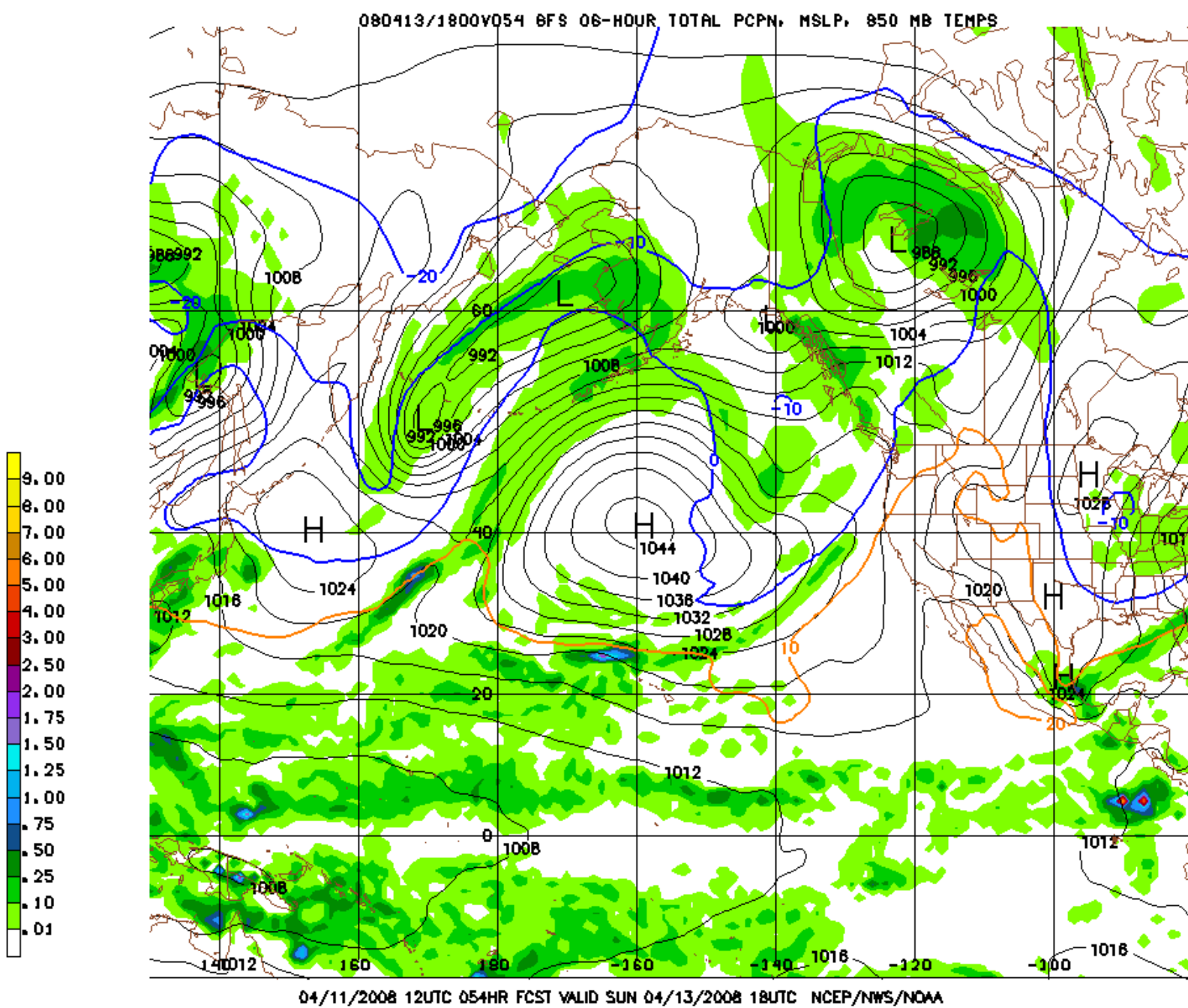


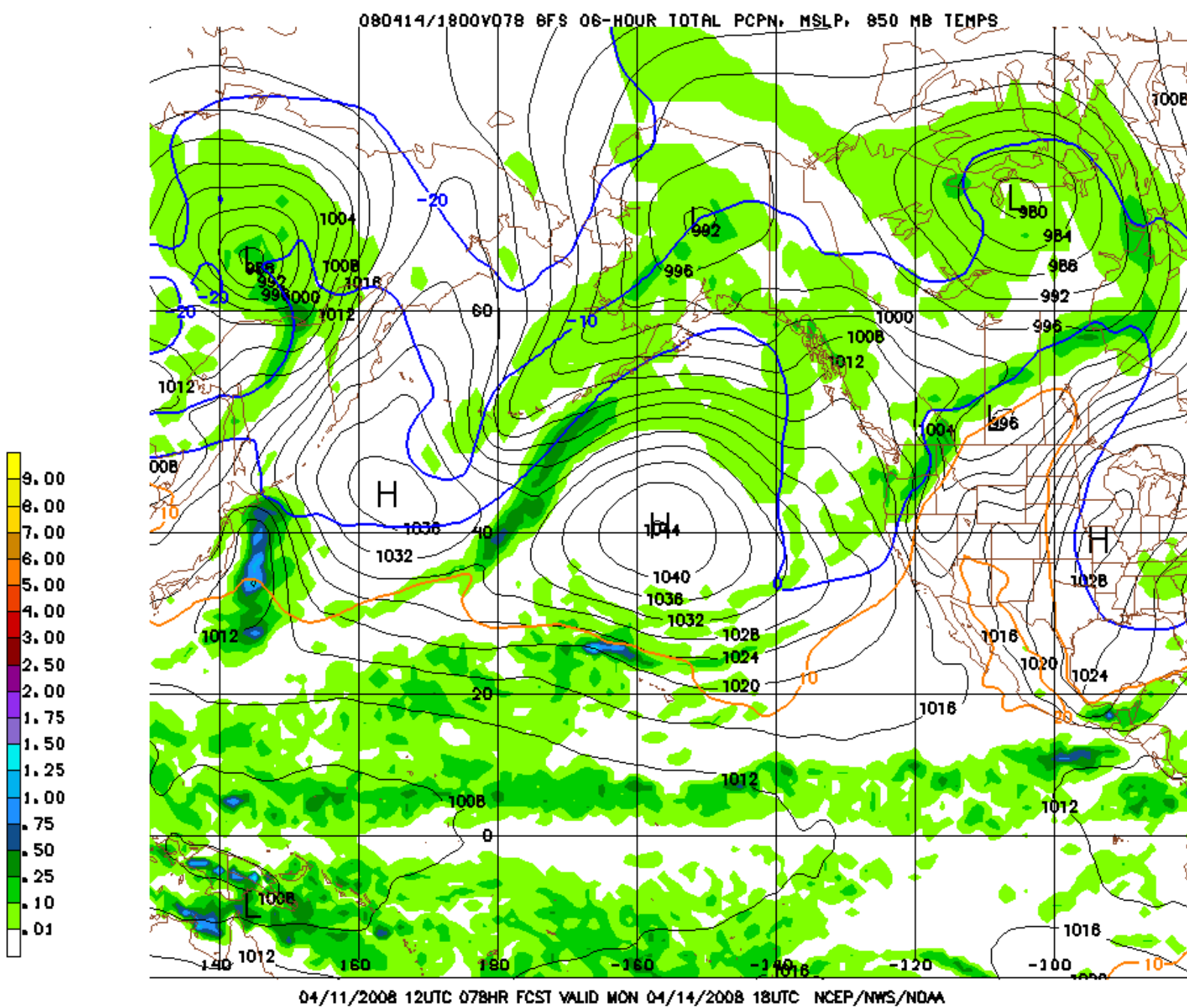
1



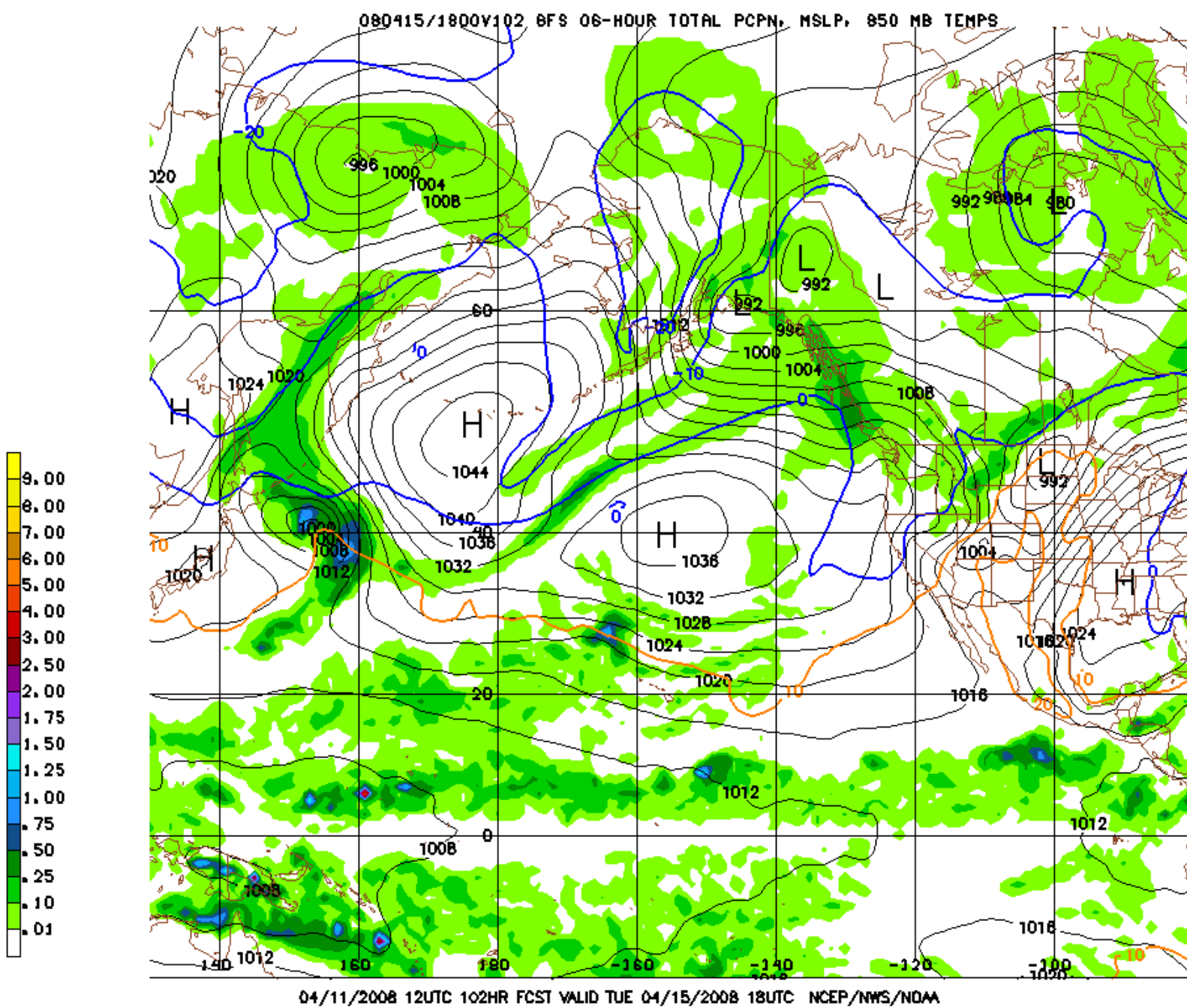




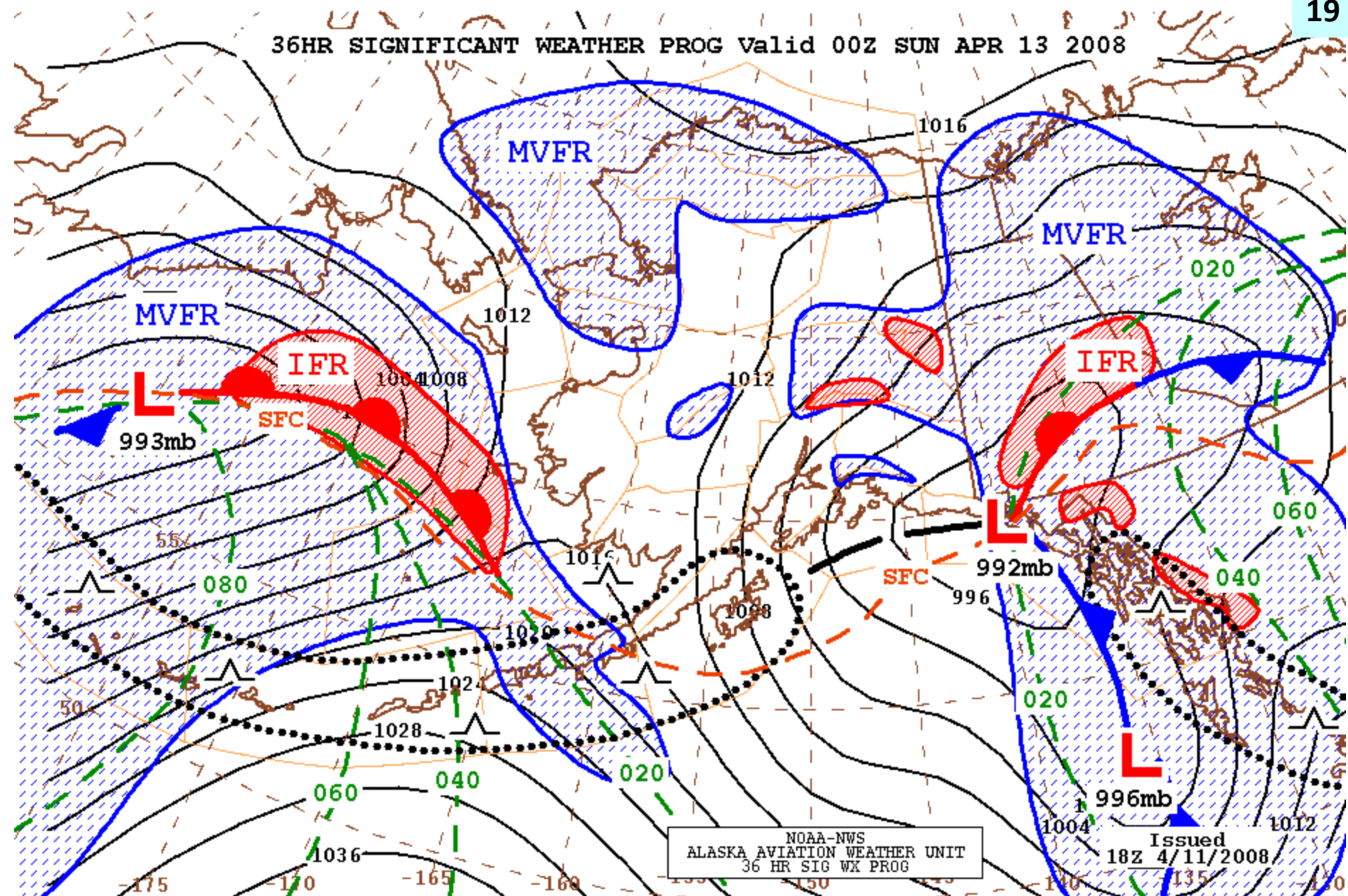




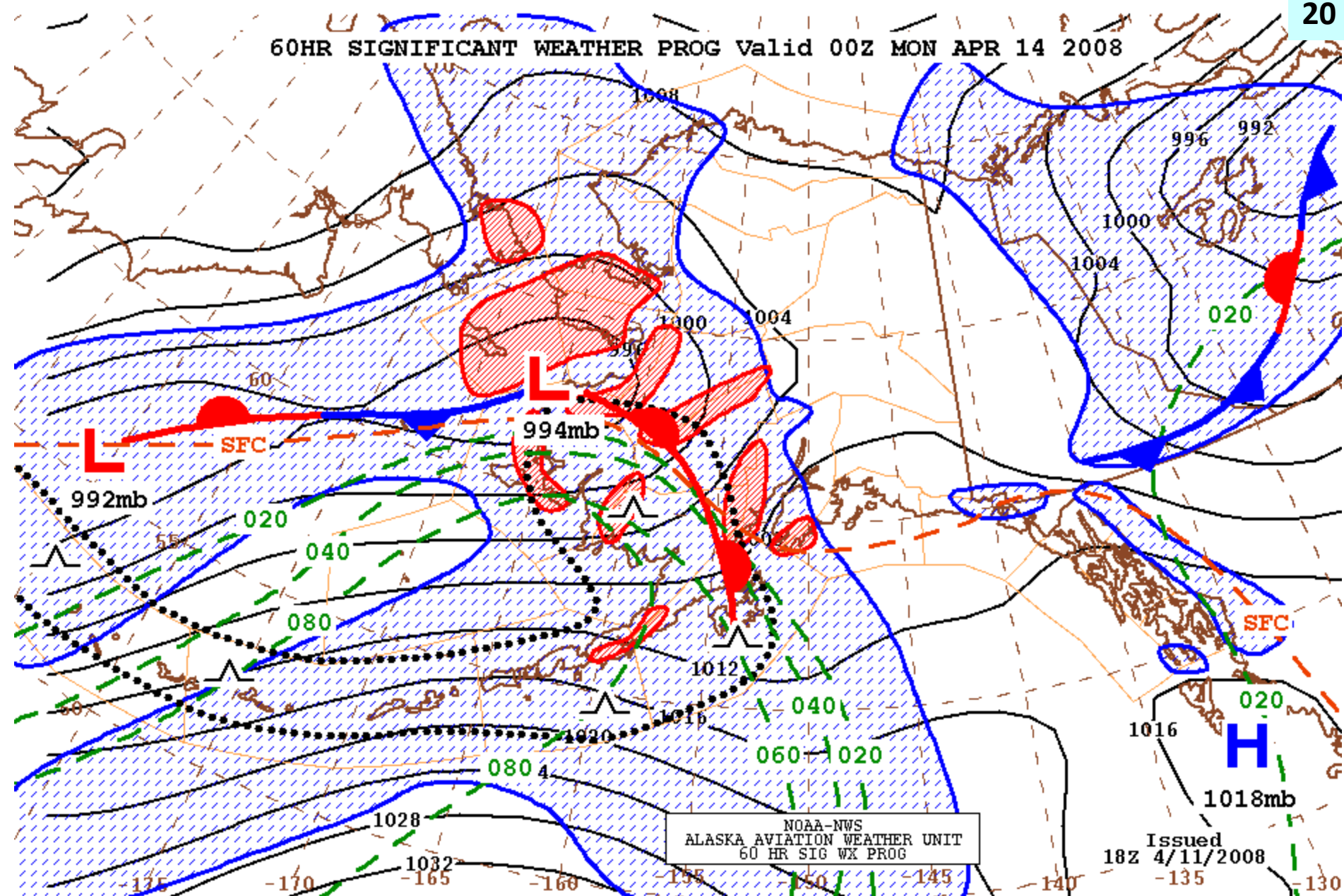




36HR SIGNIFICANT WEATHER PROG Valid 00Z SUN APR 13 2008



60HR SIGNIFICANT WEATHER PROG Valid 00Z MON APR 14 2008



NOAA-NWS  
ALASKA AVIATION WEATHER UNIT  
60 HR SIG WX PROG

18Z Issued 4/11/2008

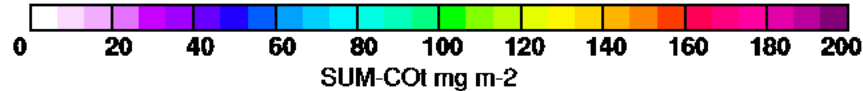
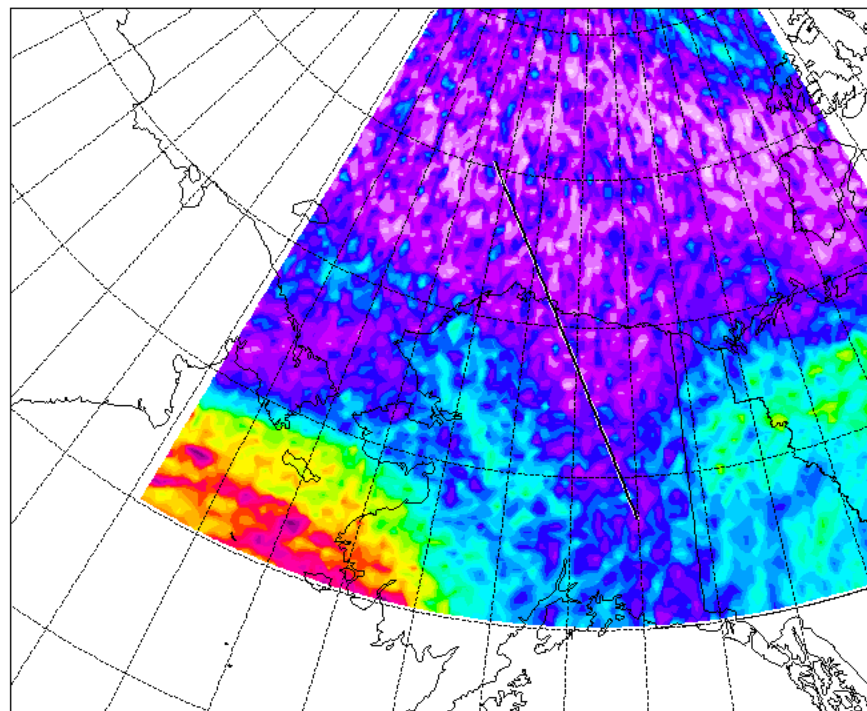


# Calipso track: anthropo. CO

**Total column of species SUM-CO for age class 0 - 20.00 DAYS**

Latest analysis time 20080411.120000 Actual time 20080412.210000

Mean value 0.536E+02 Maximum value 0.205E+03 Minimum value 0.574E+01  
Distance of grid lines 5.0 deg

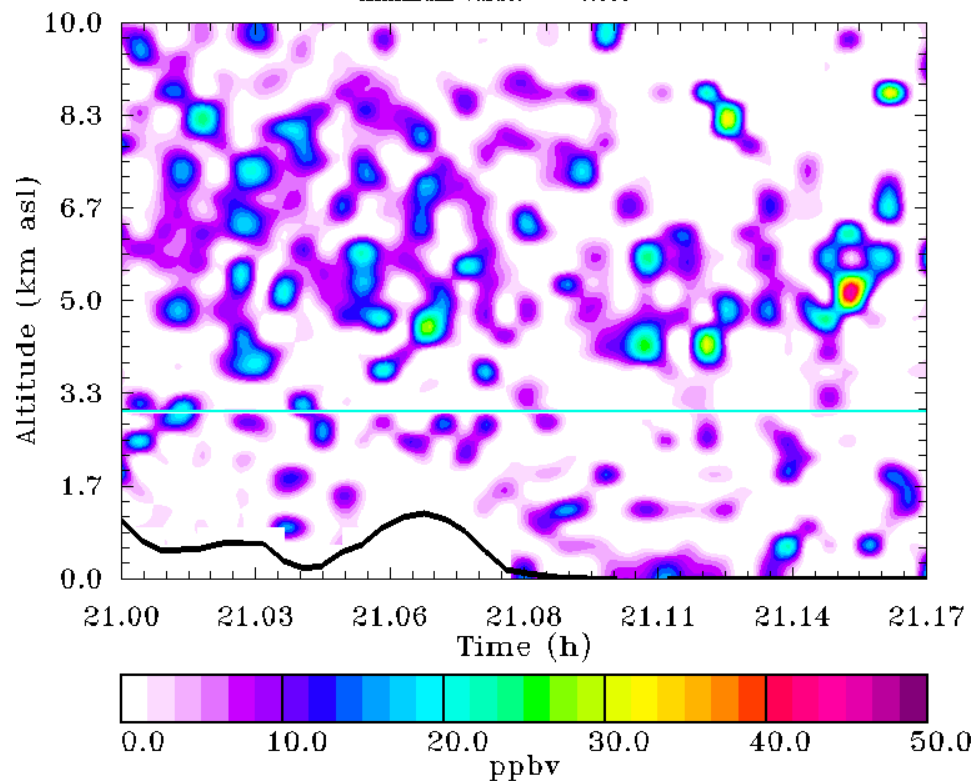


Tracer profile

Date: 20080411 150000

Start: + 0 d 21 h End: + 0 d 21 h

Mean value: 5.504  
Maximum value: 41.260  
Minimum value: 0.000



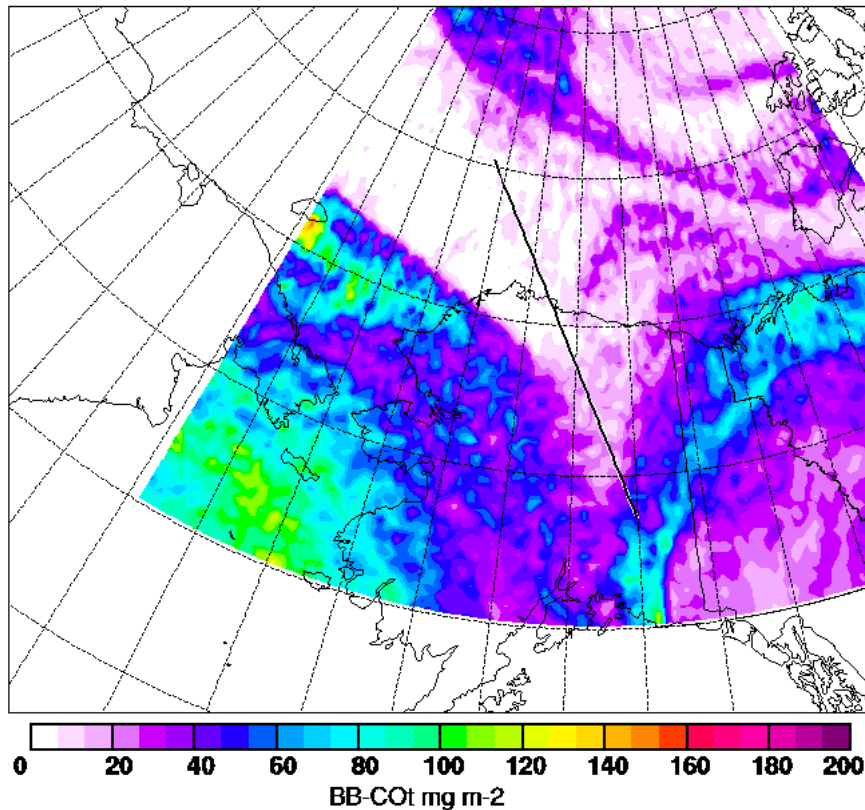
# Calipso track: Biomass burning

**Total column of species BB-COt for age class 0 - 20.00 DAYS**

Latest analysis time 20080411. 60000 Actual time 20080412.210000

Mean value 0.304E+02 Maximum value 0.151E+03 Minimum value 0.000E+00

Distance of grid lines 5.0 deg



Tracer profile

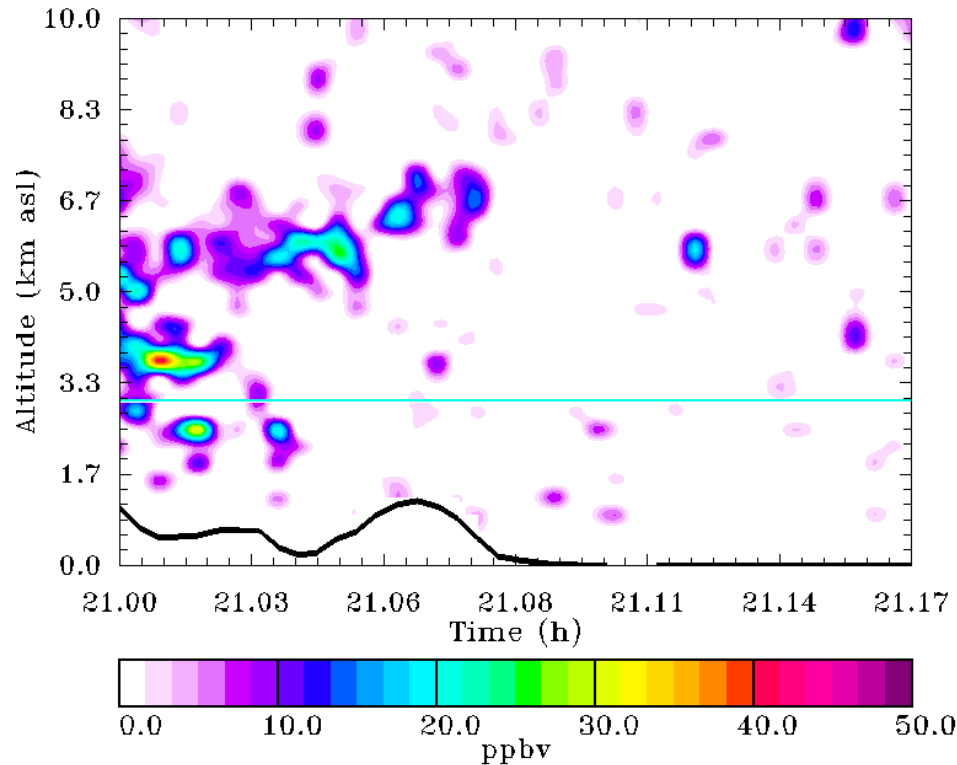
Date: 20080411 90000

Start: + 0 d 21 h End: + 0 d 21 h

Mean value: 3.990

Maximum value: 42.858

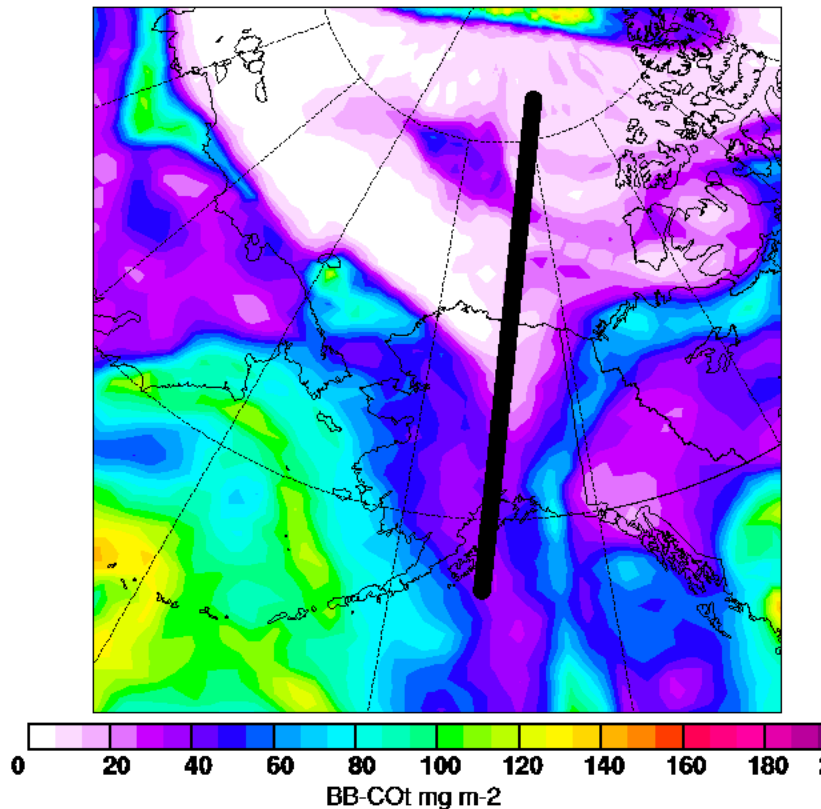
Minimum value: 0.000



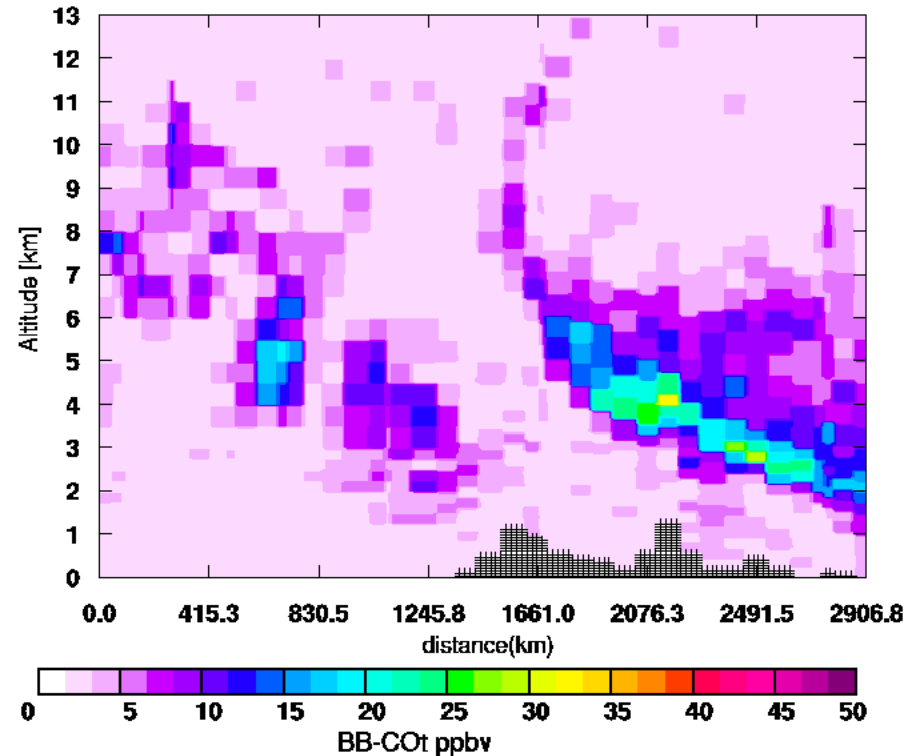
# Biomass burning

**Total column of species BB-COt for age class 0 - 20.00 DAYS**

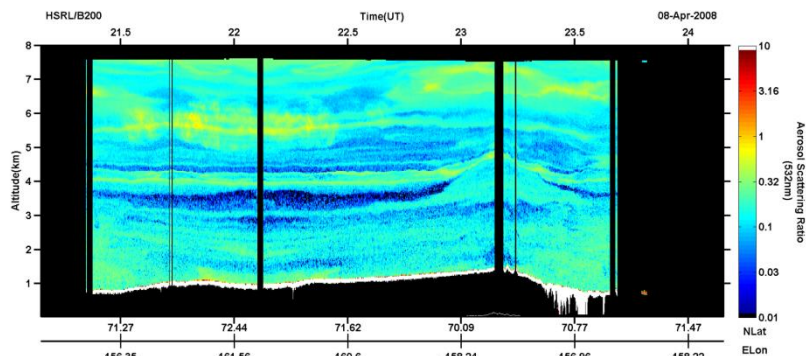
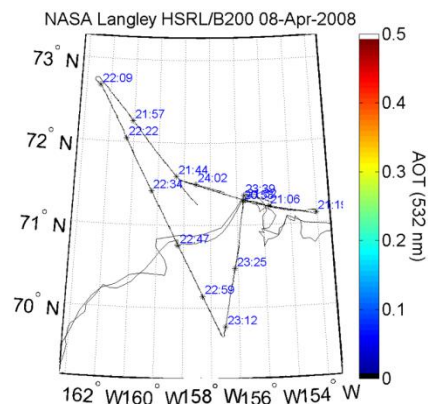
Latest analysis time 20080411. 60000 Actual time 20080412.190000  
Mean value 0.452E+02 Maximum value 0.913E+03 Minimum value 0.3  
Distance of grid lines 20.0 deg



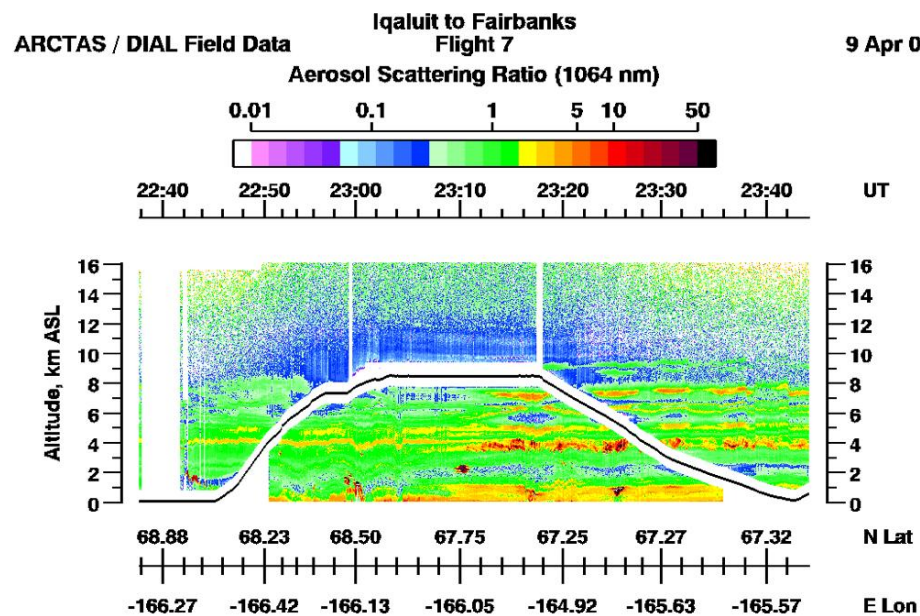
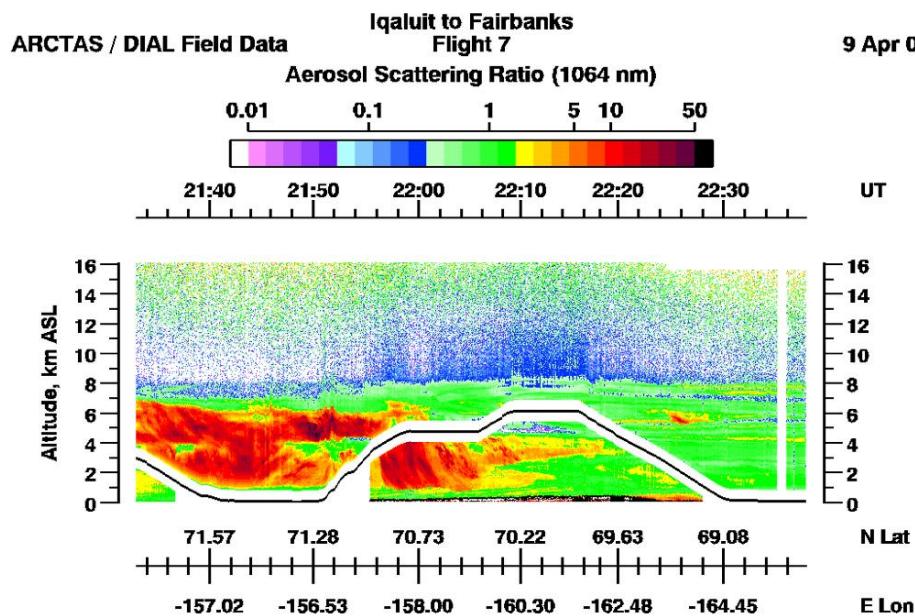
CROSS SECTION FROM 82 TO 56 LATITUDE AND -137 TO -152 LONGITUDE  
BB-COt MIXING RATIO FOR AGE CLASS 0 - 20.00 DAYS  
LATEST ANALYSIS 20080411 60000 UTC ACTUAL TIME 20080412 19



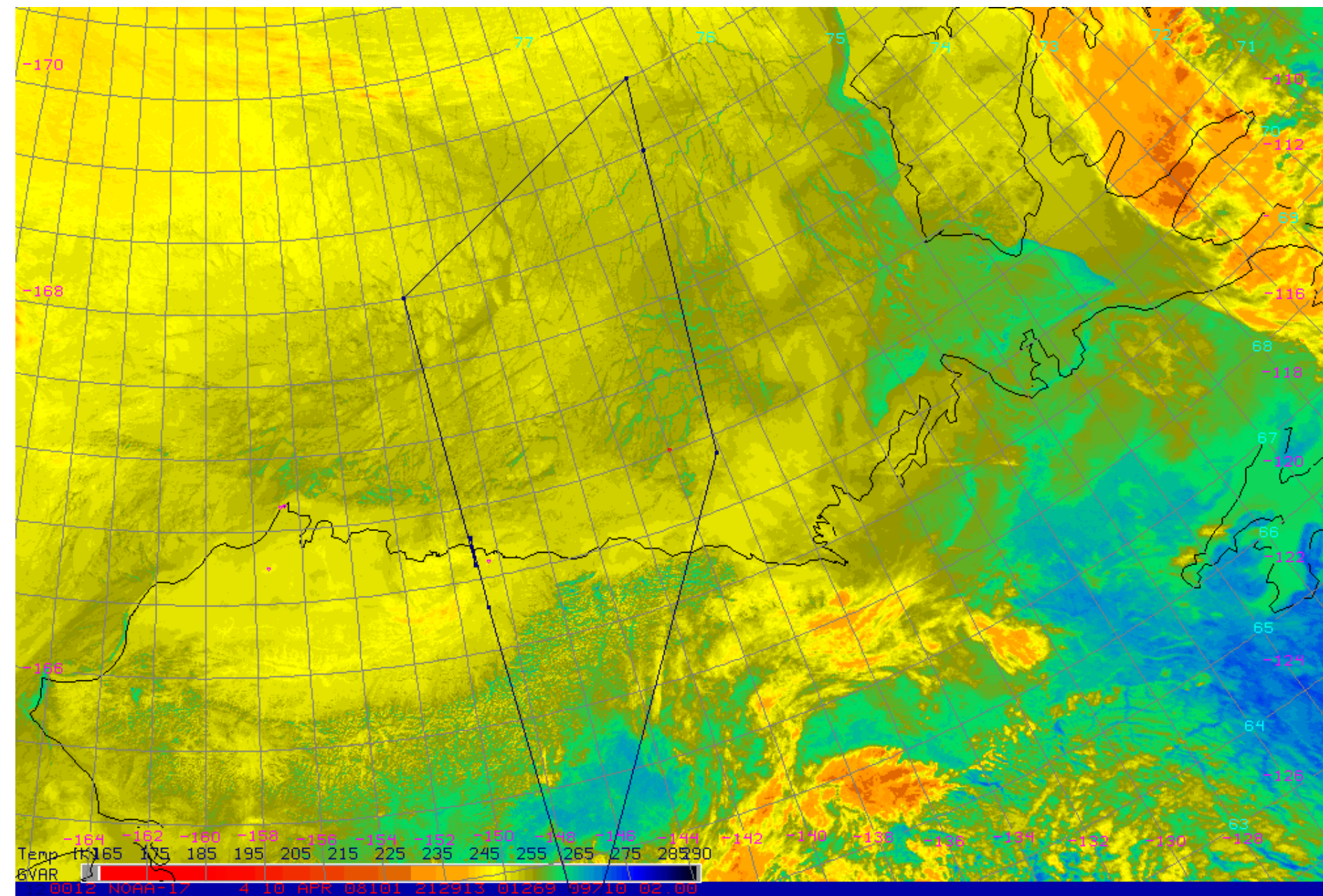
# B-200 HSRL 8 April



## DC-8 DIAL 9 April (N Pole to Fairbanks)



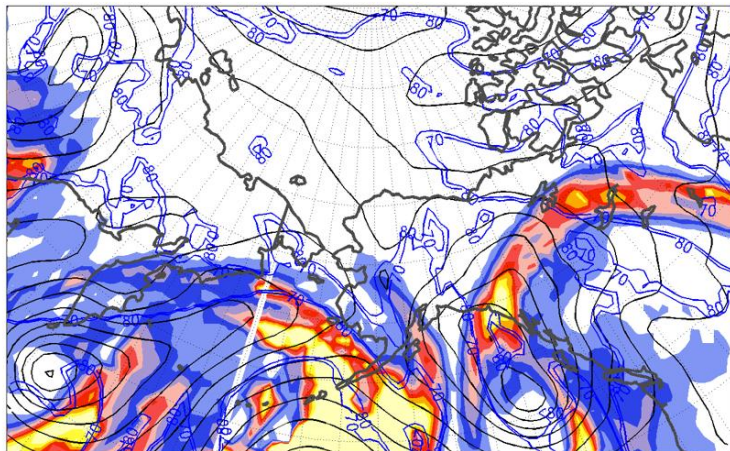




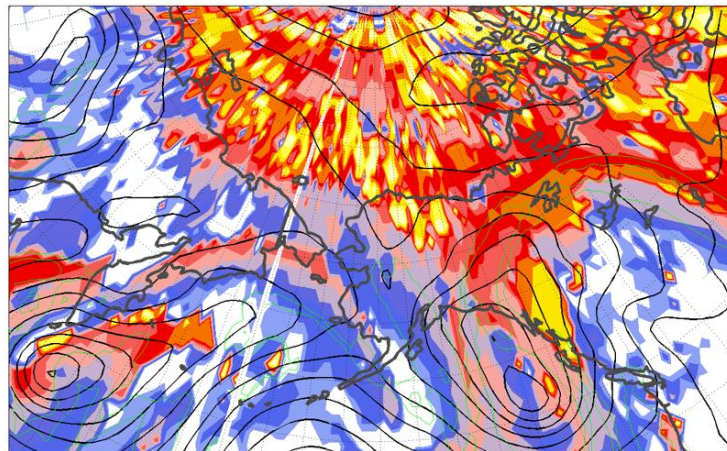


20080412 18UTC

AS-SO4 on 18 UTC 2008-04-12 at level Total column

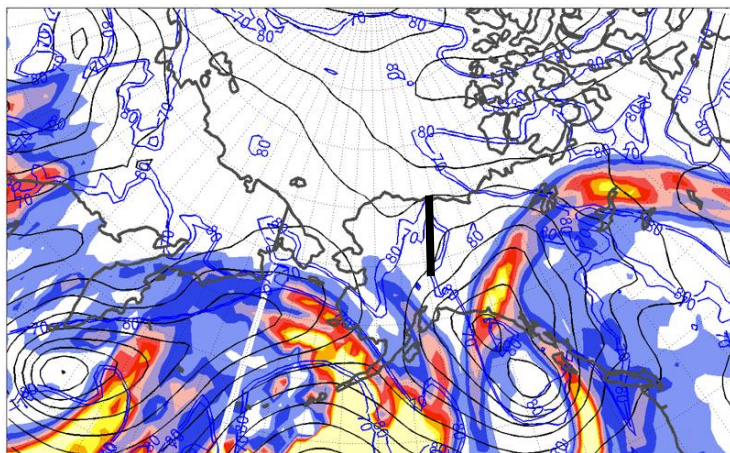


AS-SO4 at 0L (mg/m3, contours) on 18 UTC 2008-04-12 at level Total column

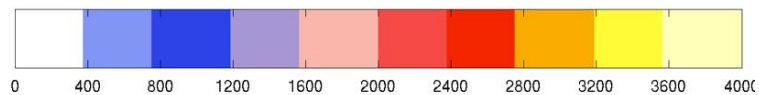
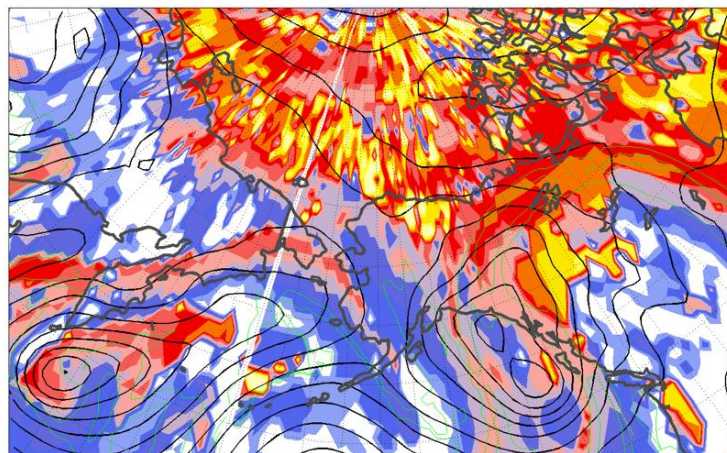


20080412 21UTC

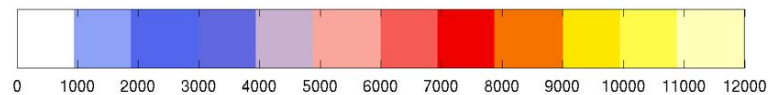
AS-SO4 on 21 UTC 2008-04-12 at level Total column



AS-SO4 at 0L (mg/m3, contours) on 21 UTC 2008-04-12 at level Total column



Asian SO4 TOC

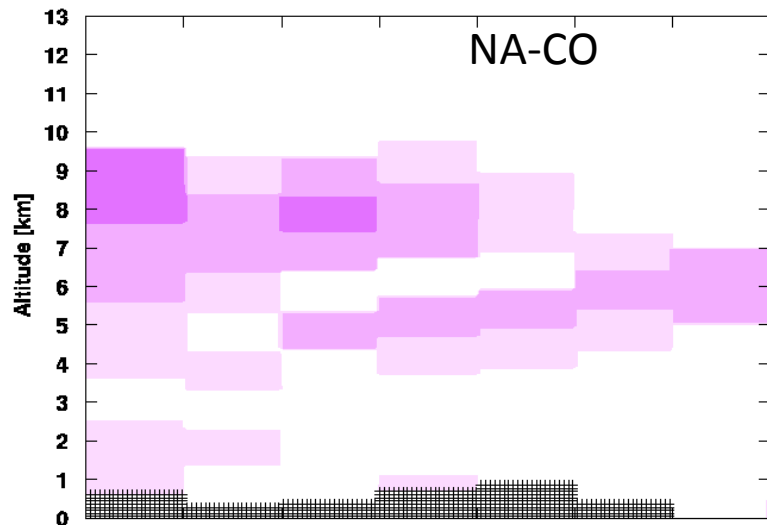


plume maximum altitude

CROSS SECTION FROM -148.0 TO -148.0 LONGITUDE AND 64.0 TO 71.0 LATITUDE

NA-CO MIXING RATIO FOR AGE CLASS 0 - 20.00 DAYS

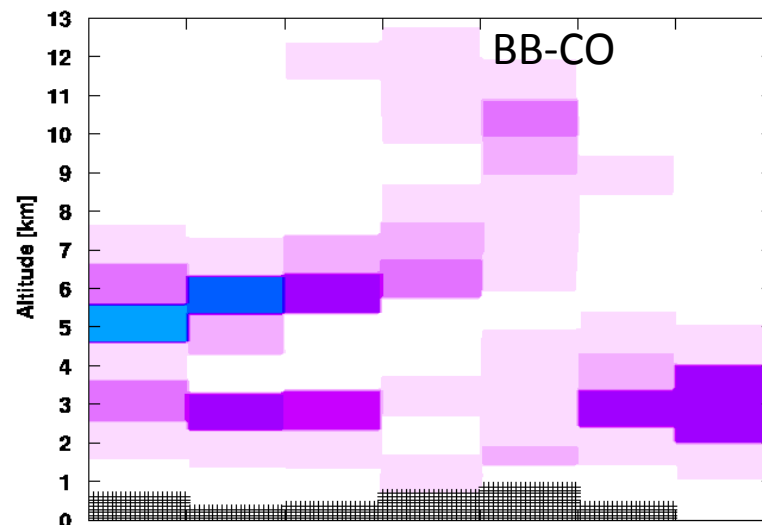
ANALYSIS @ 20080411 60000 UTC ACTUAL @ 20080412 210000 UTC



CROSS SECTION FROM -148.0 TO -148.0 LONGITUDE AND 64.0 TO 71.0 LATITUDE

BB-CO MIXING RATIO FOR AGE CLASS 0 - 20.00 DAYS

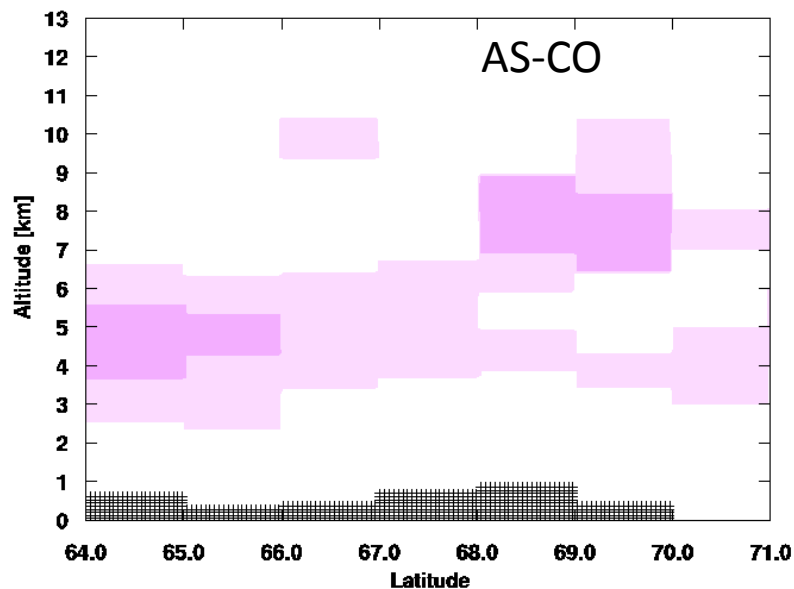
ANALYSIS @ 20080411 60000 UTC ACTUAL @ 20080412 210000 UTC



CROSS SECTION FROM -148.0 TO -148.0 LONGITUDE AND 64.0 TO 71.0 LATITUDE

AS-CO MIXING RATIO FOR AGE CLASS 0 - 20.00 DAYS

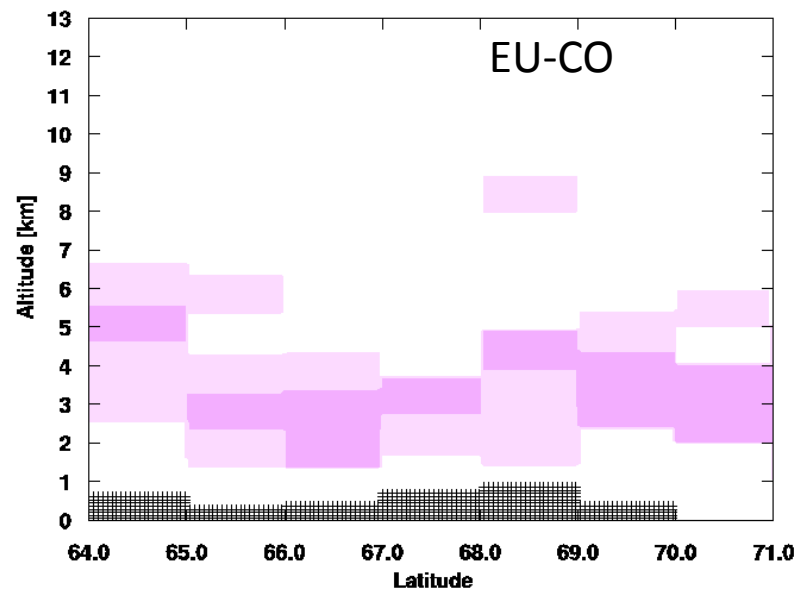
ANALYSIS @ 20080411 60000 UTC ACTUAL @ 20080412 210000 UTC



CROSS SECTION FROM -148.0 TO -148.0 LONGITUDE AND 64.0 TO 71.0 LATITUDE

EU-CO MIXING RATIO FOR AGE CLASS 0 - 20.00 DAYS

ANALYSIS @ 20080411 60000 UTC ACTUAL @ 20080412 210000 UTC

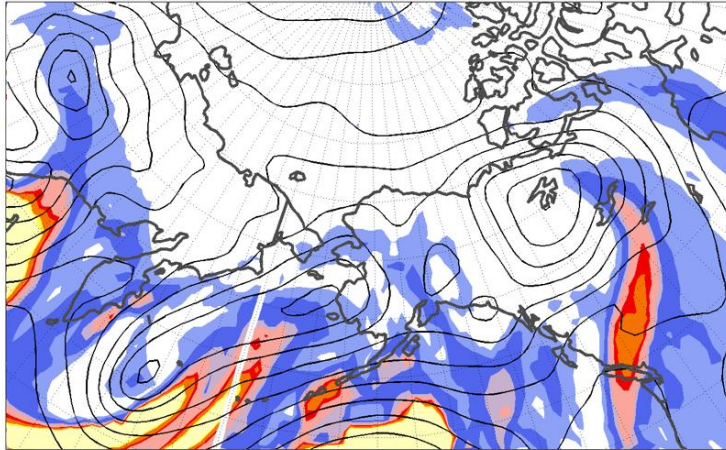




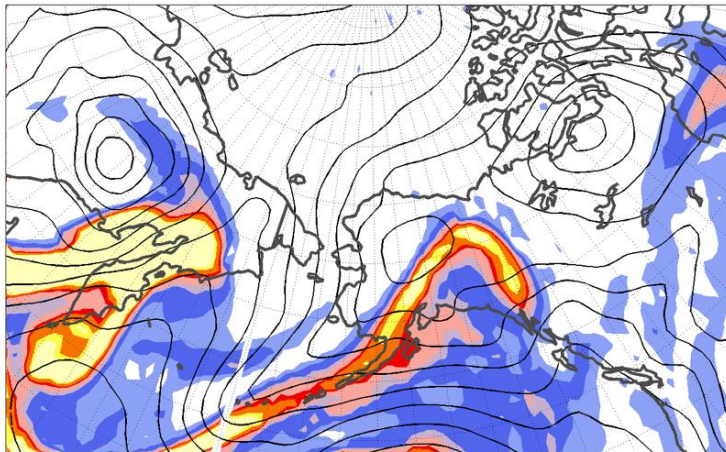
## Further outlook GFS

20080413 18UTC  
20080414 18UTC  
20080415 06UTC

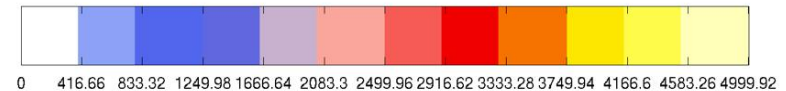
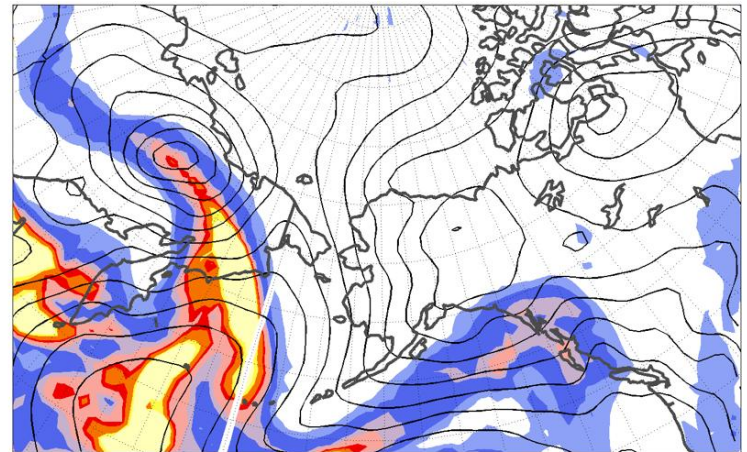
AS-SO4 on 18 UTC 2008-04-13 at level Total column



AS-SO4 on 18 UTC 2008-04-14 at level Total column



AS-SO4 on 06 UTC 2008-04-15 at level Total column



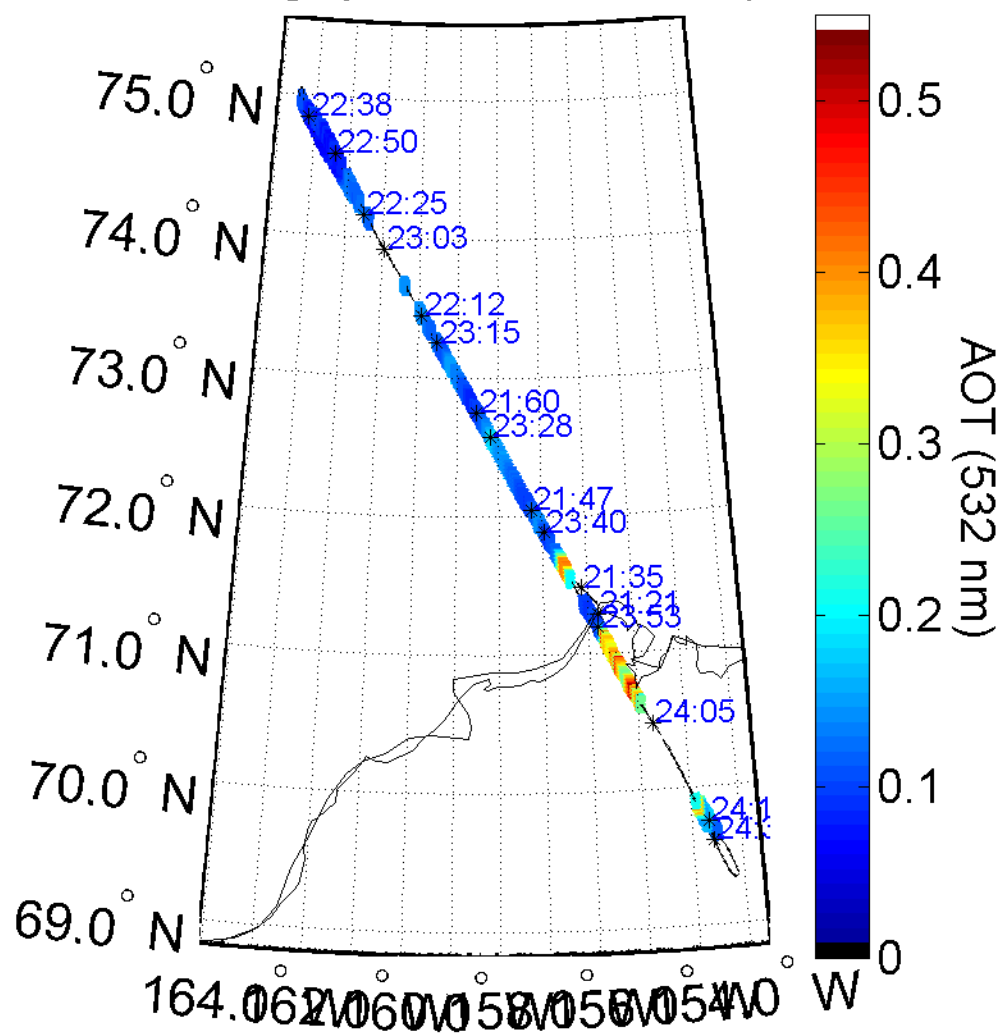
**RAQMS Fairbanks Local  
FX Discussion:**

**00Z 04/13/2008  
(60hr)**

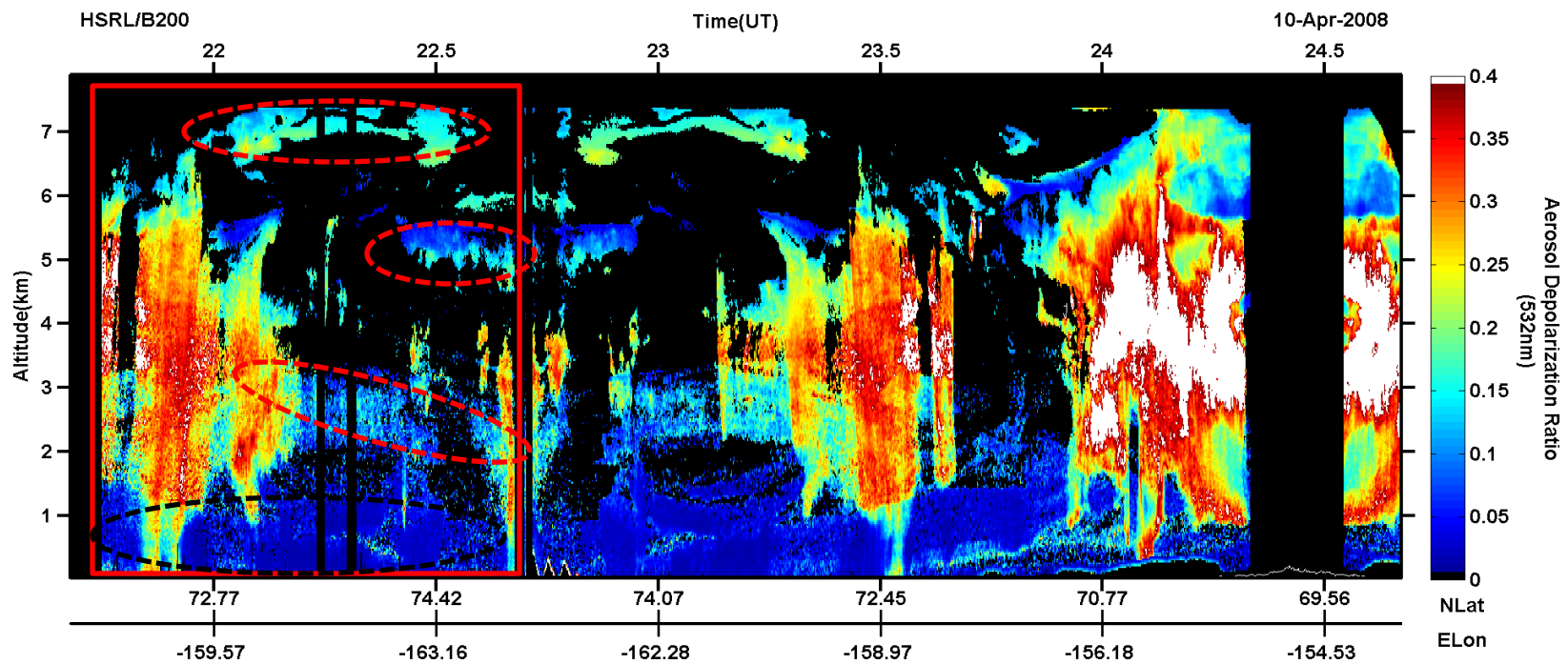
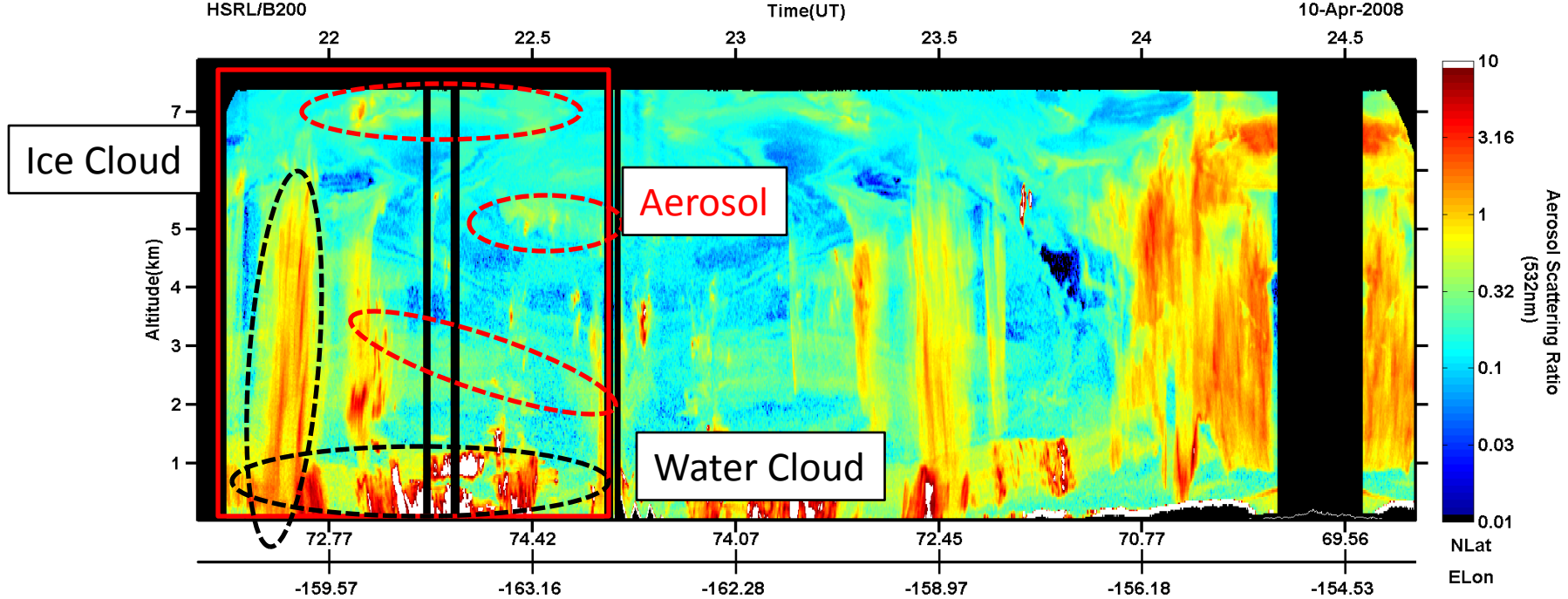
**initialized 12Z 04/10/2008**

# HSRL CALIPSO Validation Traject

NASA Langley HSRL/B200 10-Apr-2008



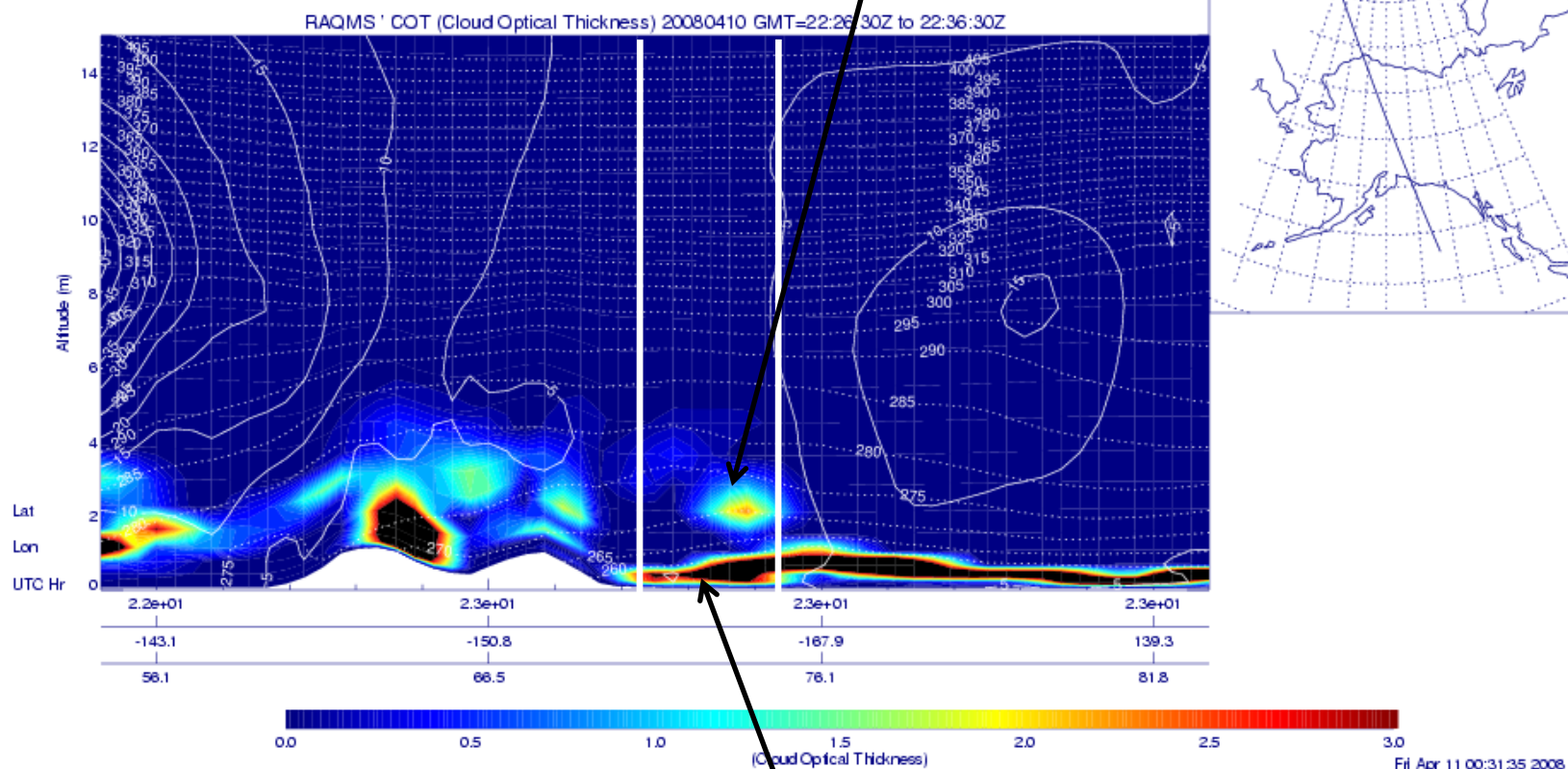




# RAQMS Analyzed Cloud Optical Thickness along CALIPSO Track 04/10/08

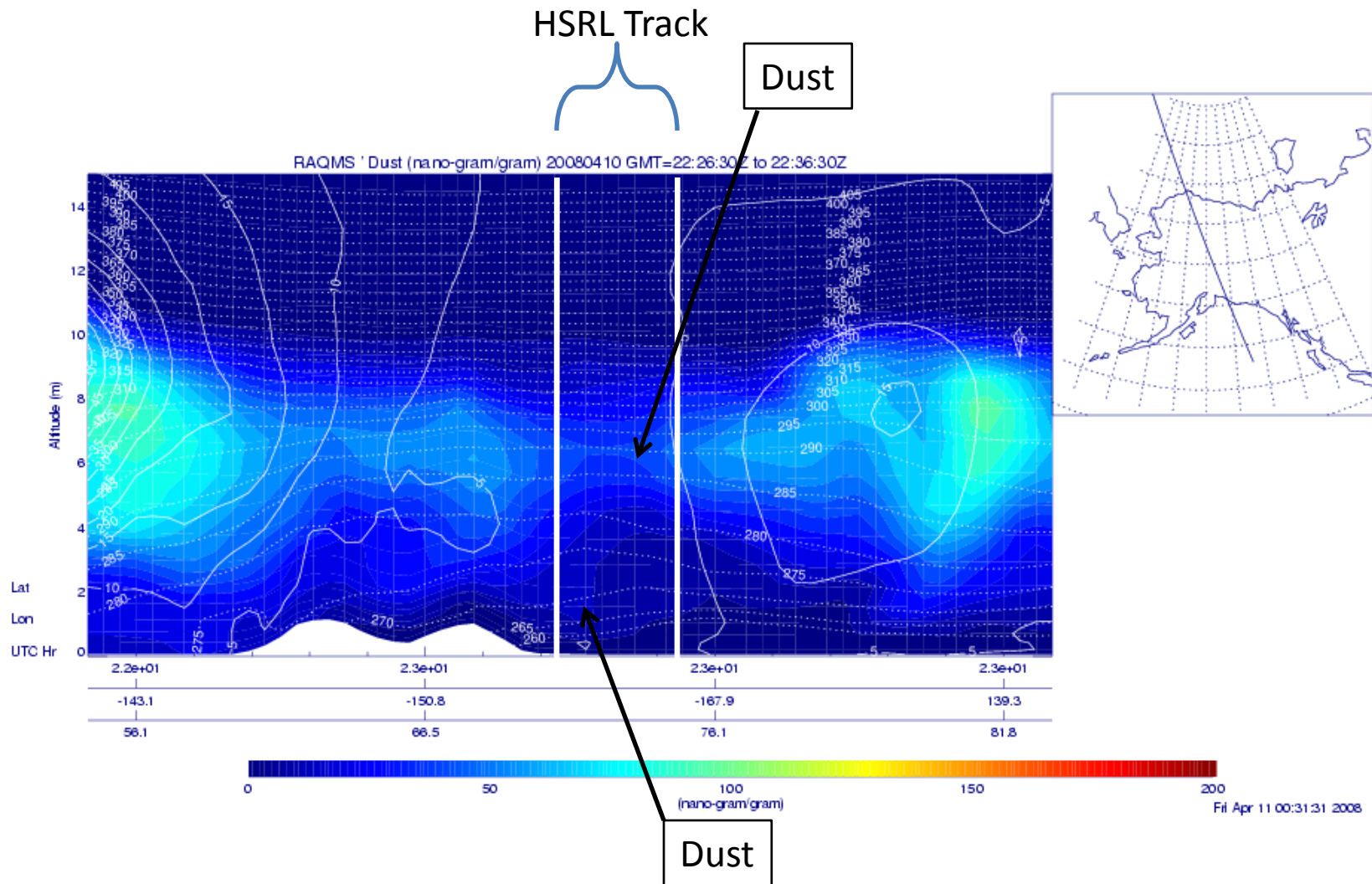
HSRL Track

Ice Cloud



Water Cloud

## RAQMS Analyzed Dust along CALIPSO Track 04/10/08

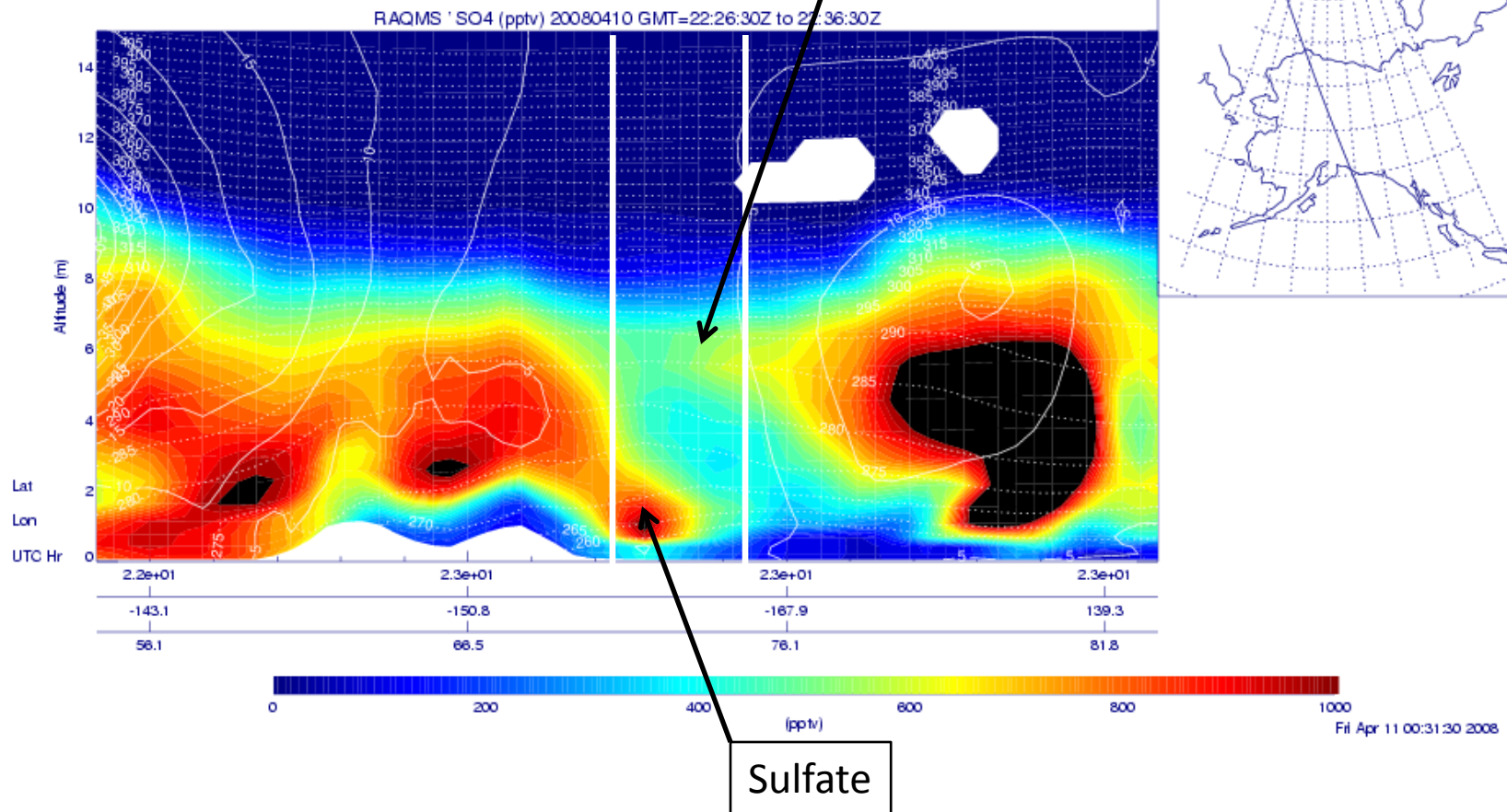




# RAQMS Analyzed SO<sub>4</sub> along CALIPSO Track 04/10/08

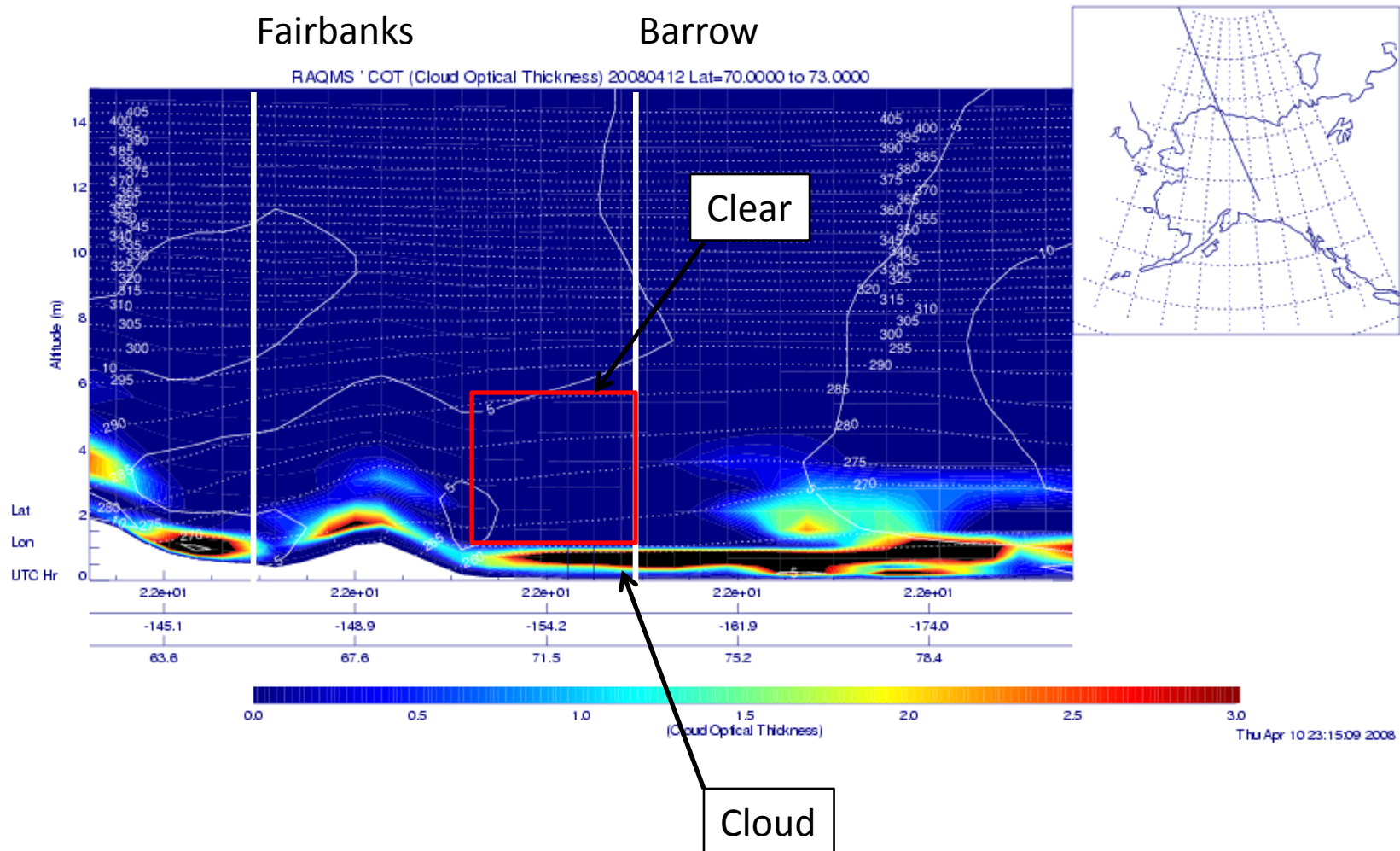
HSRL Track

Sulfate

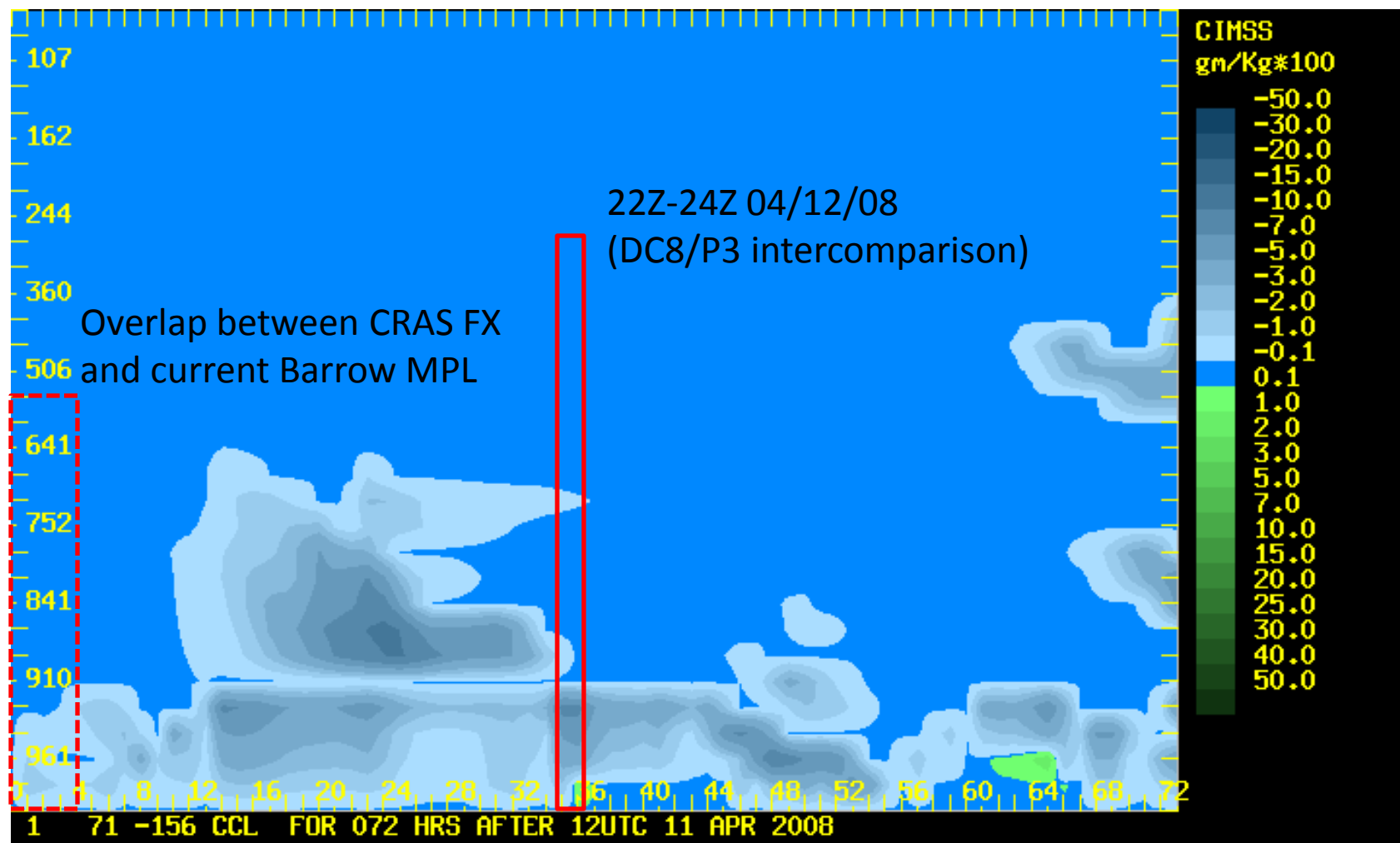


## P3/DC8 Intercomparison Flight 04/12/08

### RAQMS Cloud Optical Thickness FX on CALIPSO Track 04/12/08

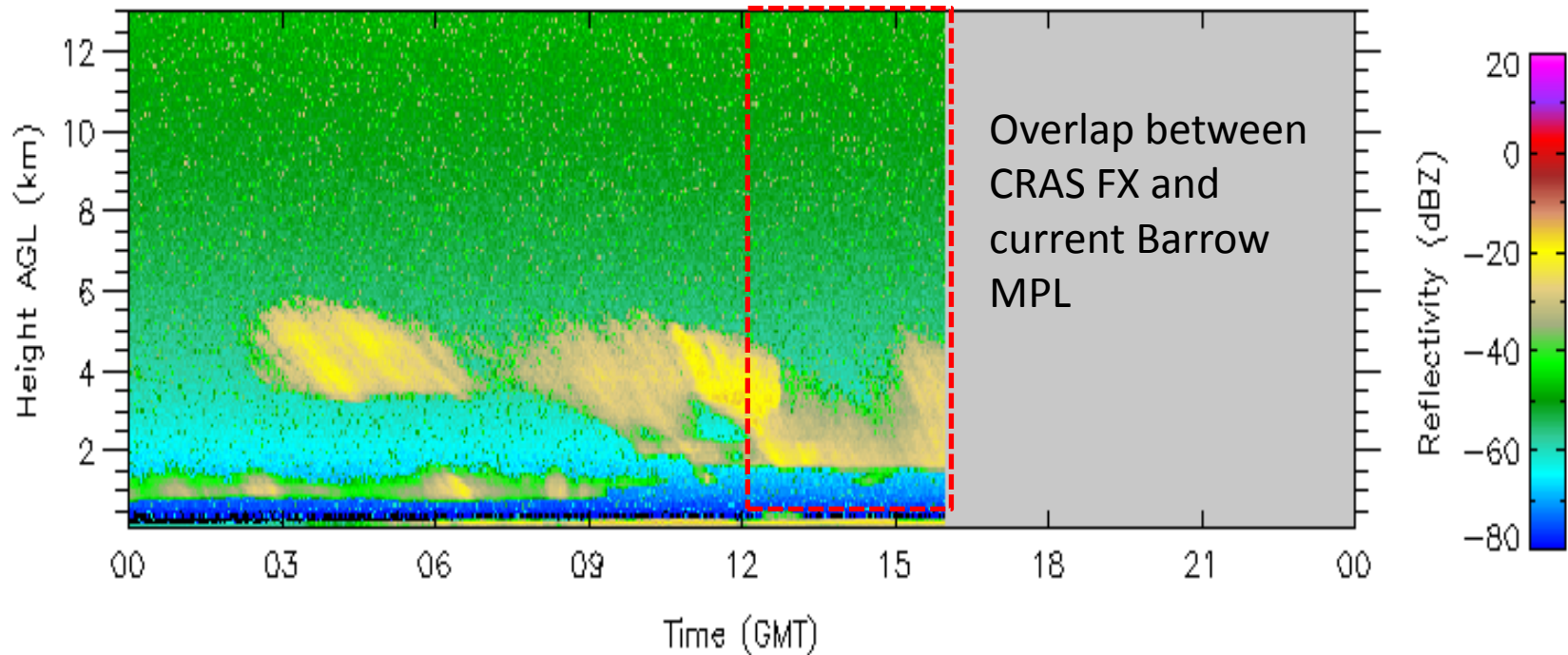


# CIMSS Regional Assimilation Forecast System (CRAS) Barrow Cloud FX (Bob Aune, NOAA/NESDIS)



20080411

nsammormomC1.b1, General, Mode 3



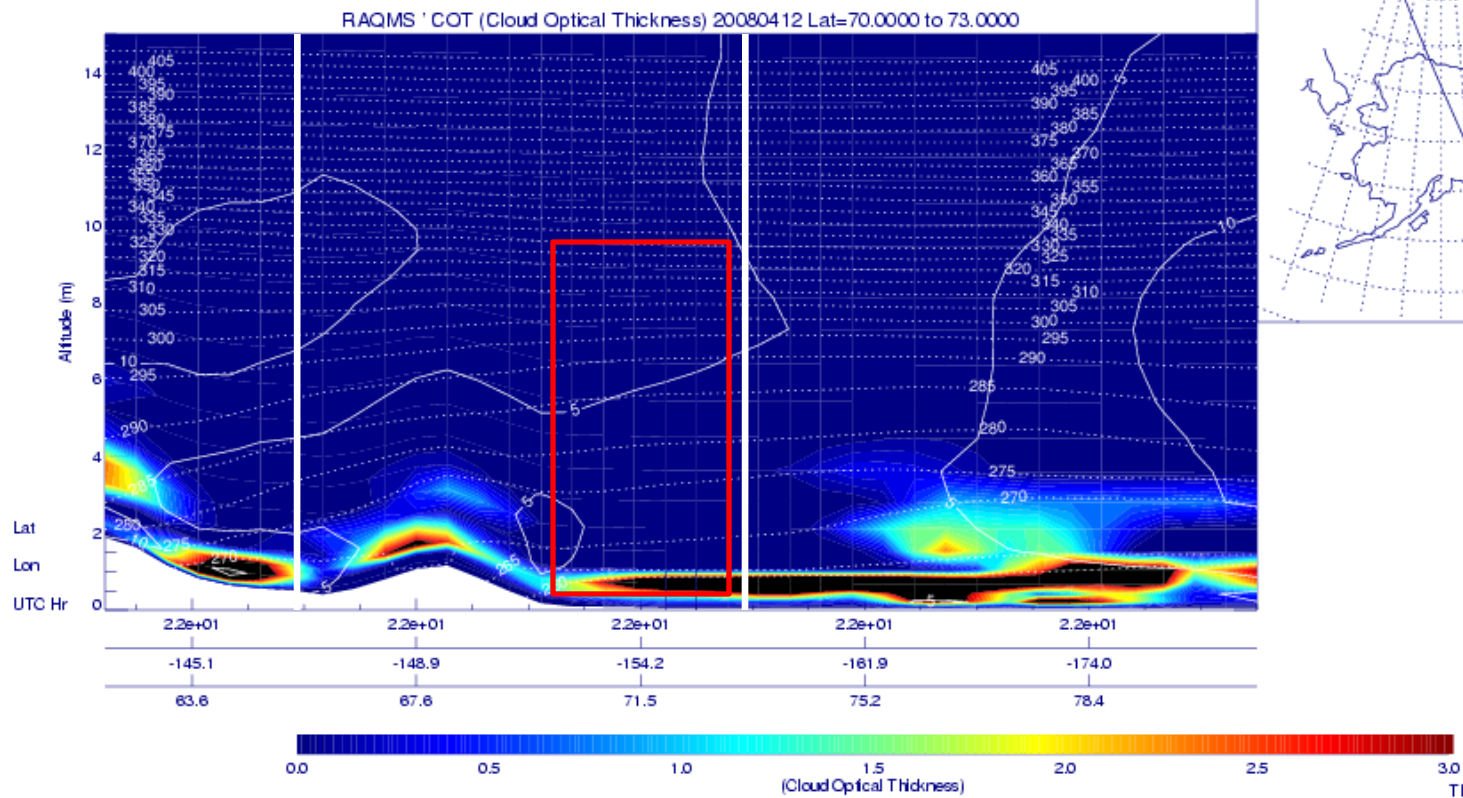
**CRAS is currently overestimating BL cloudiness and underestimating ice clouds at 1.5-5km at Barrow**



# RAQMS Cloud Optical Depth FX on CALIPSO Track 04/12/08

Fairbanks

Barrow

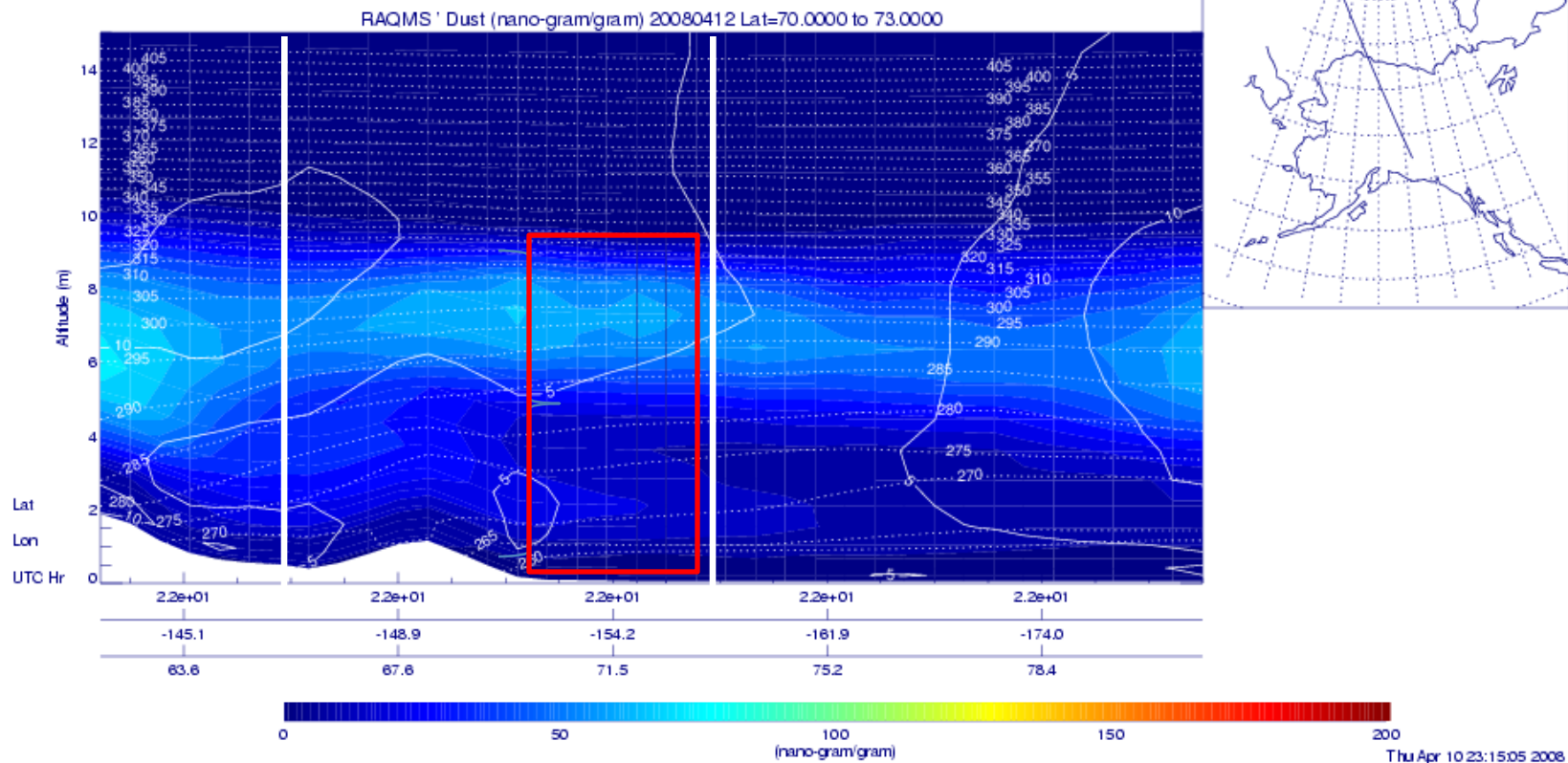


Thu Apr 10 23:15:09 2008

## RAQMS Dust FX on CALIPSO Track 04/12/08

Fairbanks

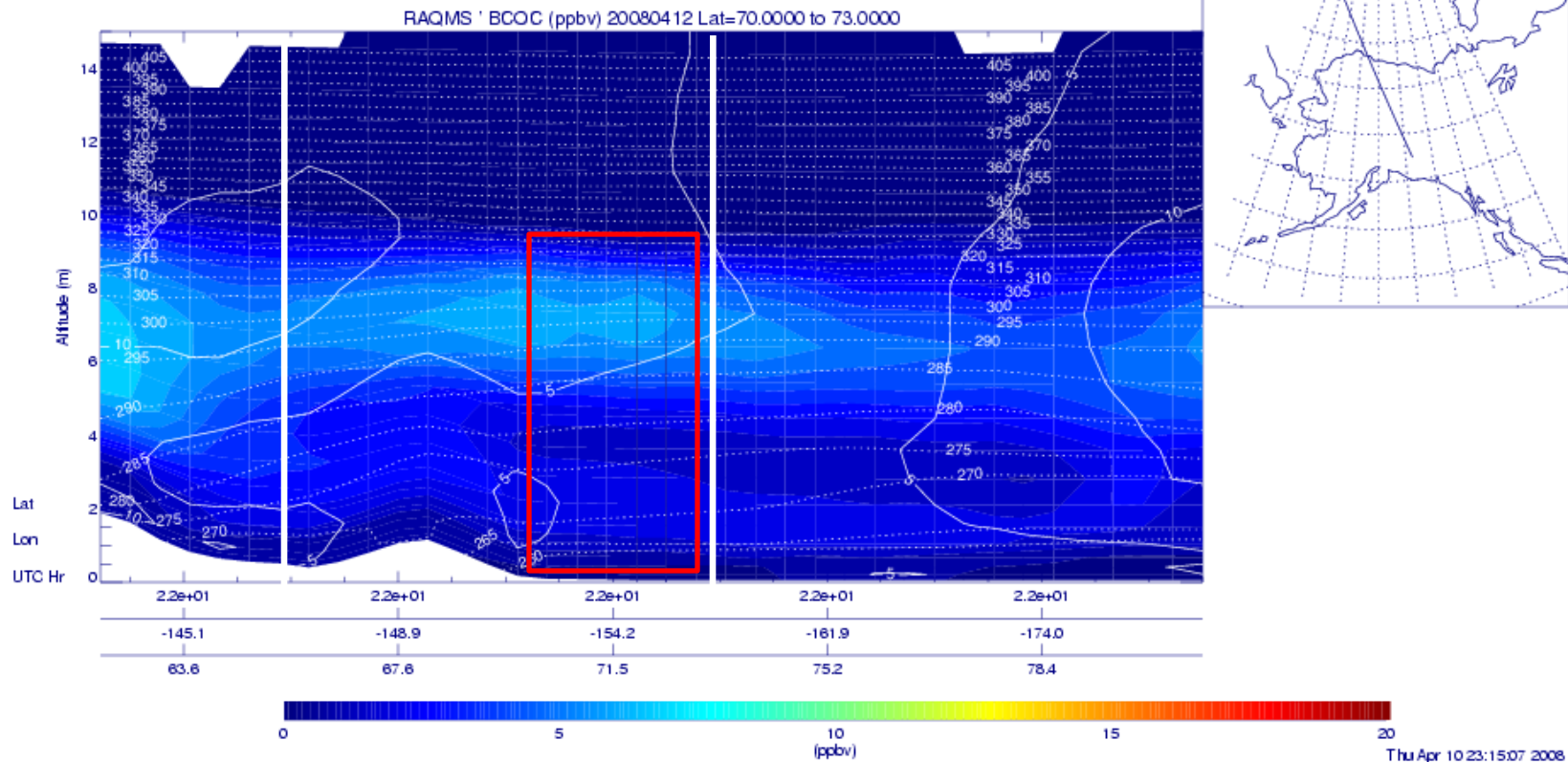
Barrow



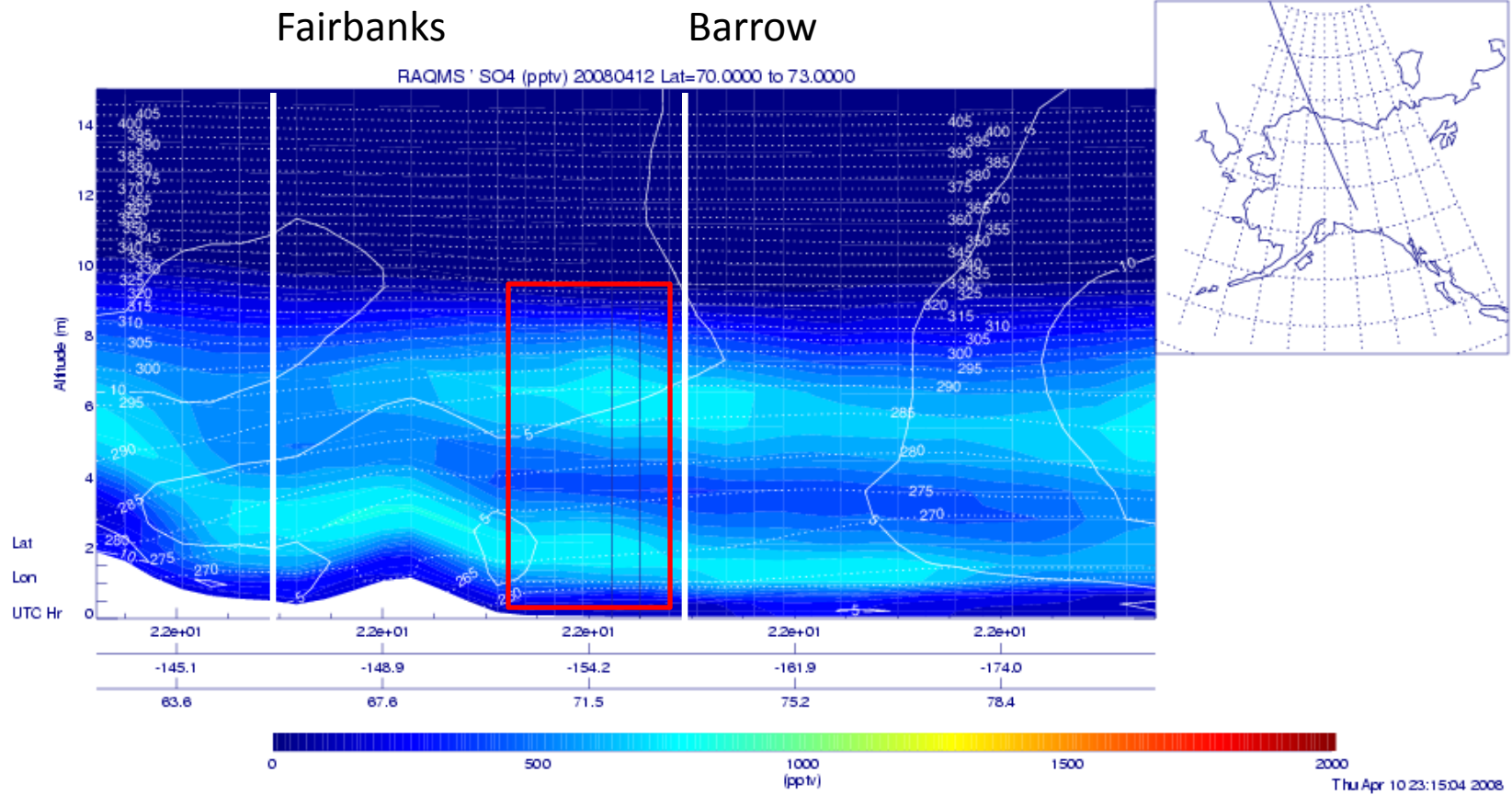
## RAQMS BCOC FX on CALIPSO Track 04/12/08

Fairbanks

Barrow



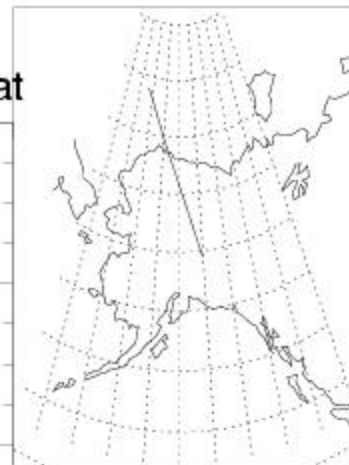
## RAQMS SO4 FX on CALIPSO Track 04/12/08



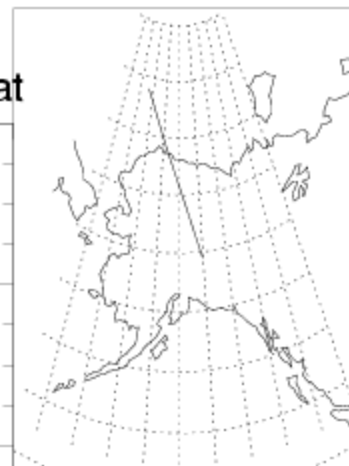
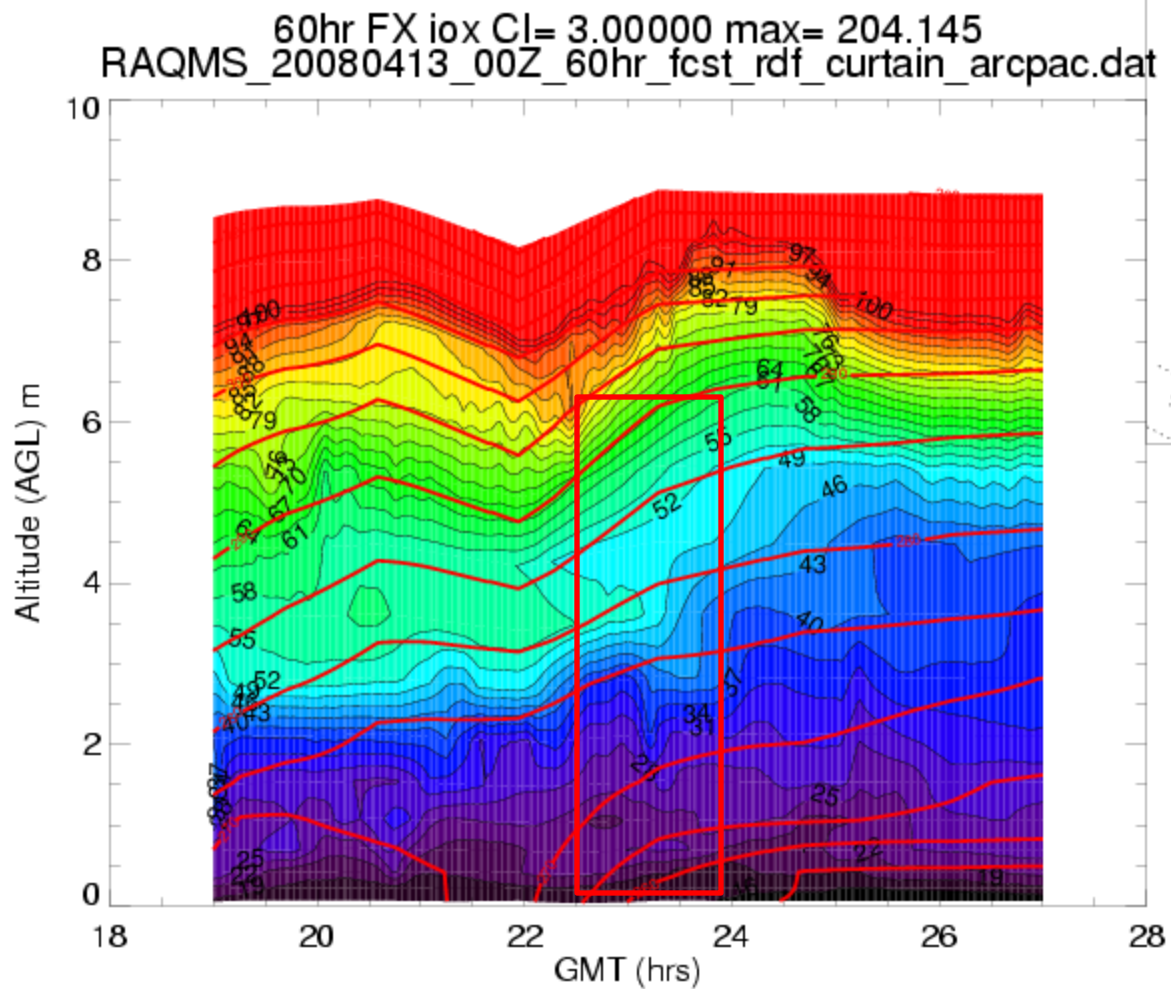
**Good opportunity for sampling vertical gradients in aerosols along CALIPSO track south of Barrow**



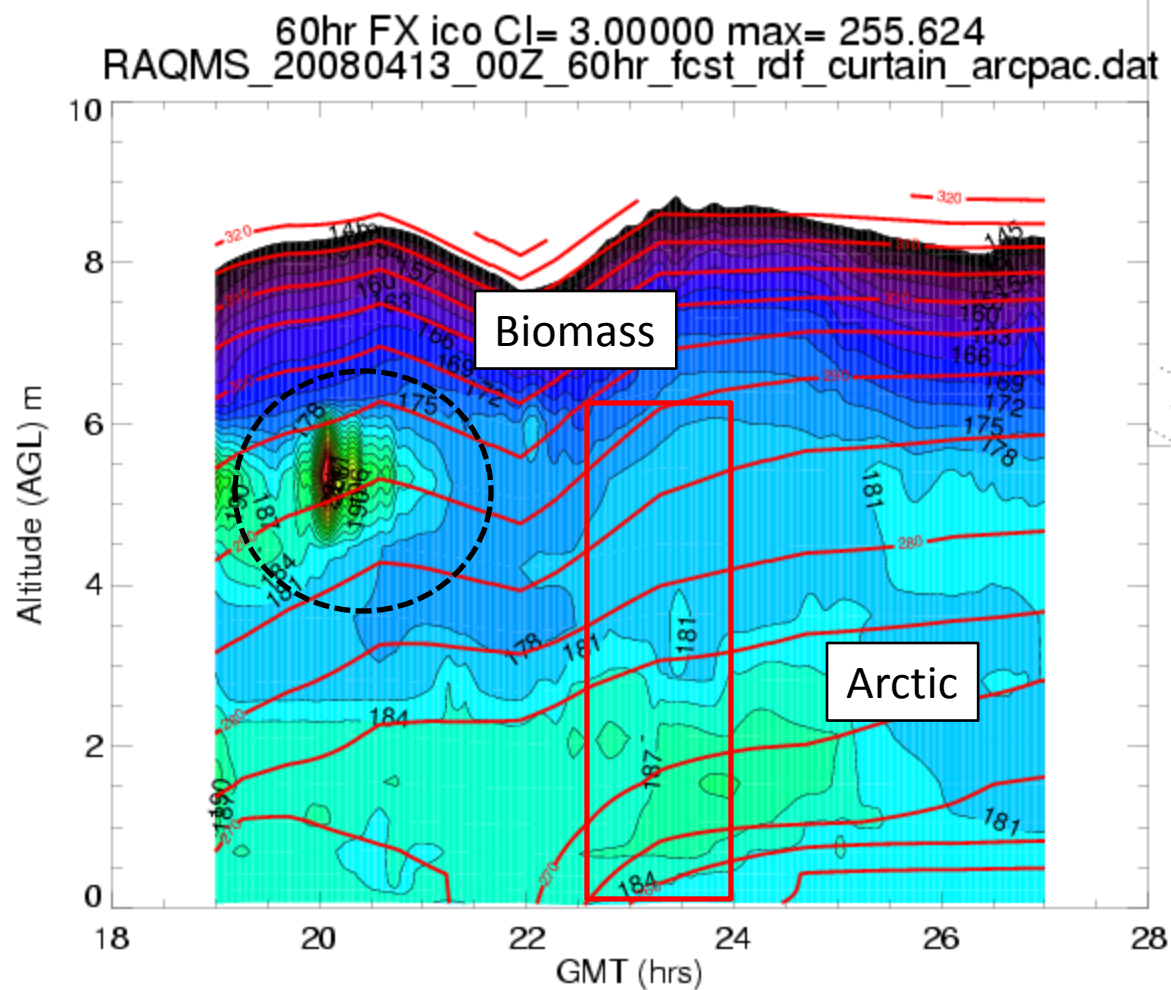
## RAQMS SO4 RDF FX on CALIPSO Track 00Z 04/13/08



## RAQMS O3 RDF FX on CALIPSO Track 00Z 04/13/08

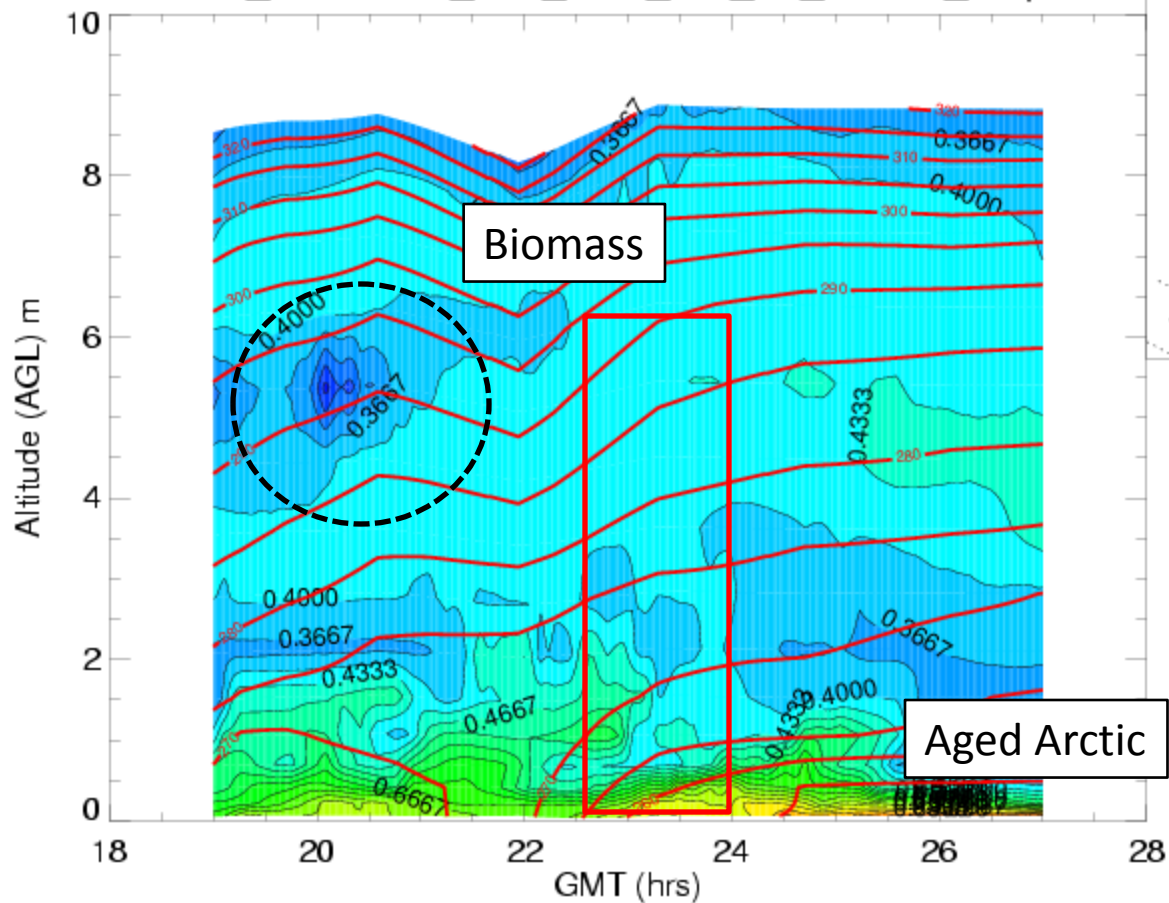


## RAQMS CO RDF FX on CALIPSO Track 00Z 04/13/08



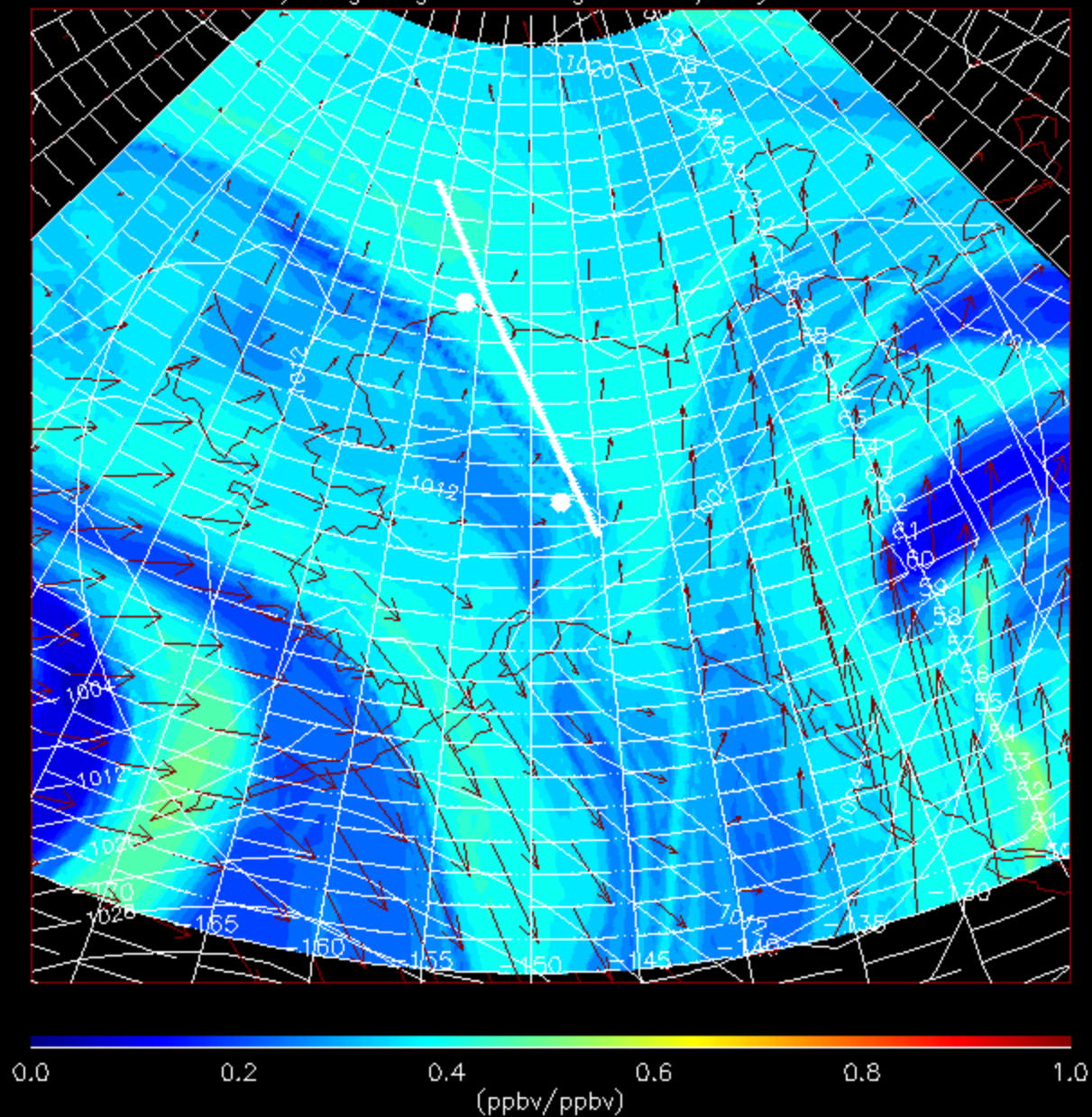


60hr FX ipannoy CI= 0.0333333 max= 0.897060  
RAQMS\_20080413\_00Z\_60hr\_fcst\_rdf\_curtain\_arcpac.dat

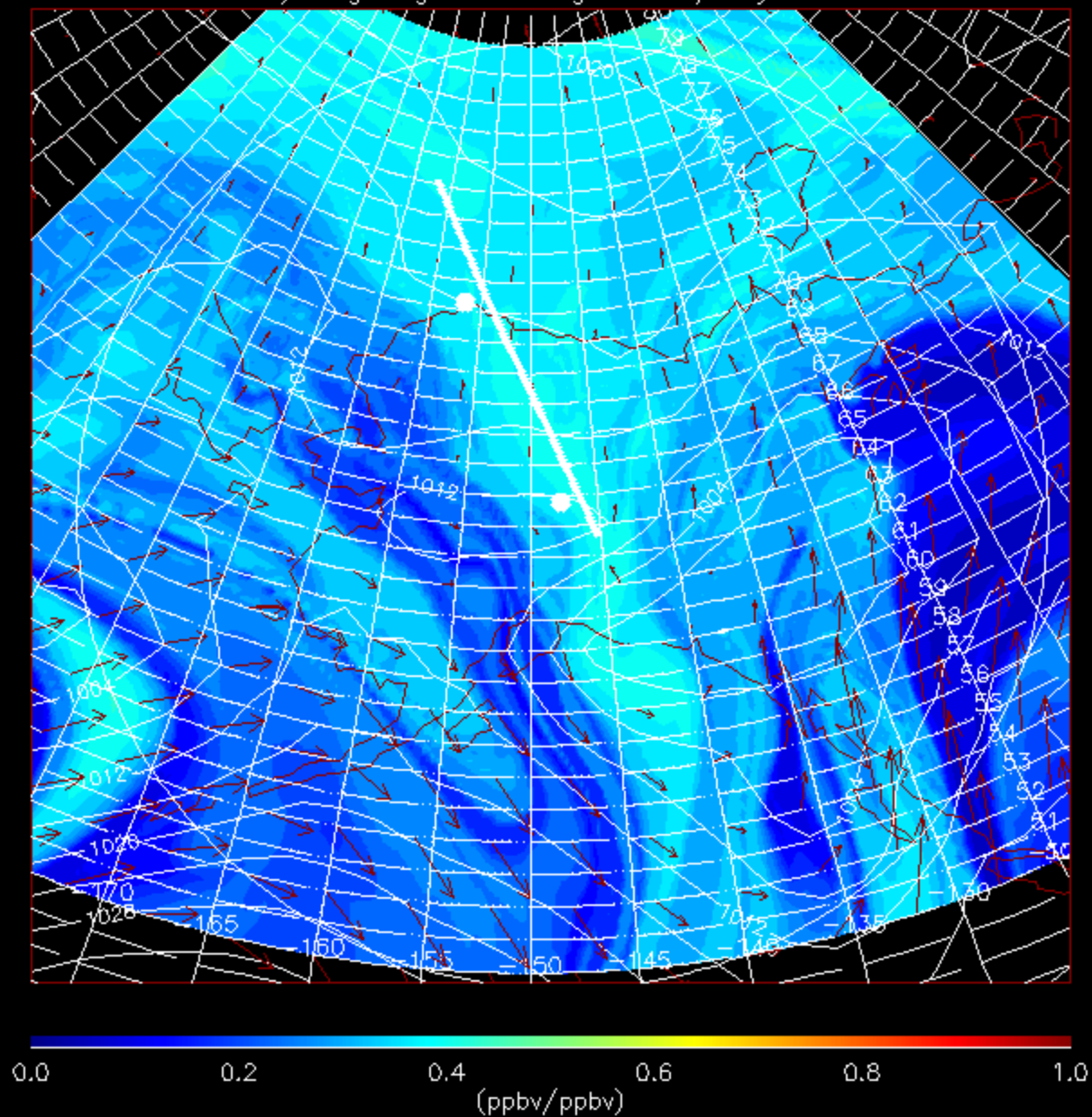


# 5km RDF PAN/NOy

5km 5-day Lagrangian Averaged PAN/NOy 2008041300

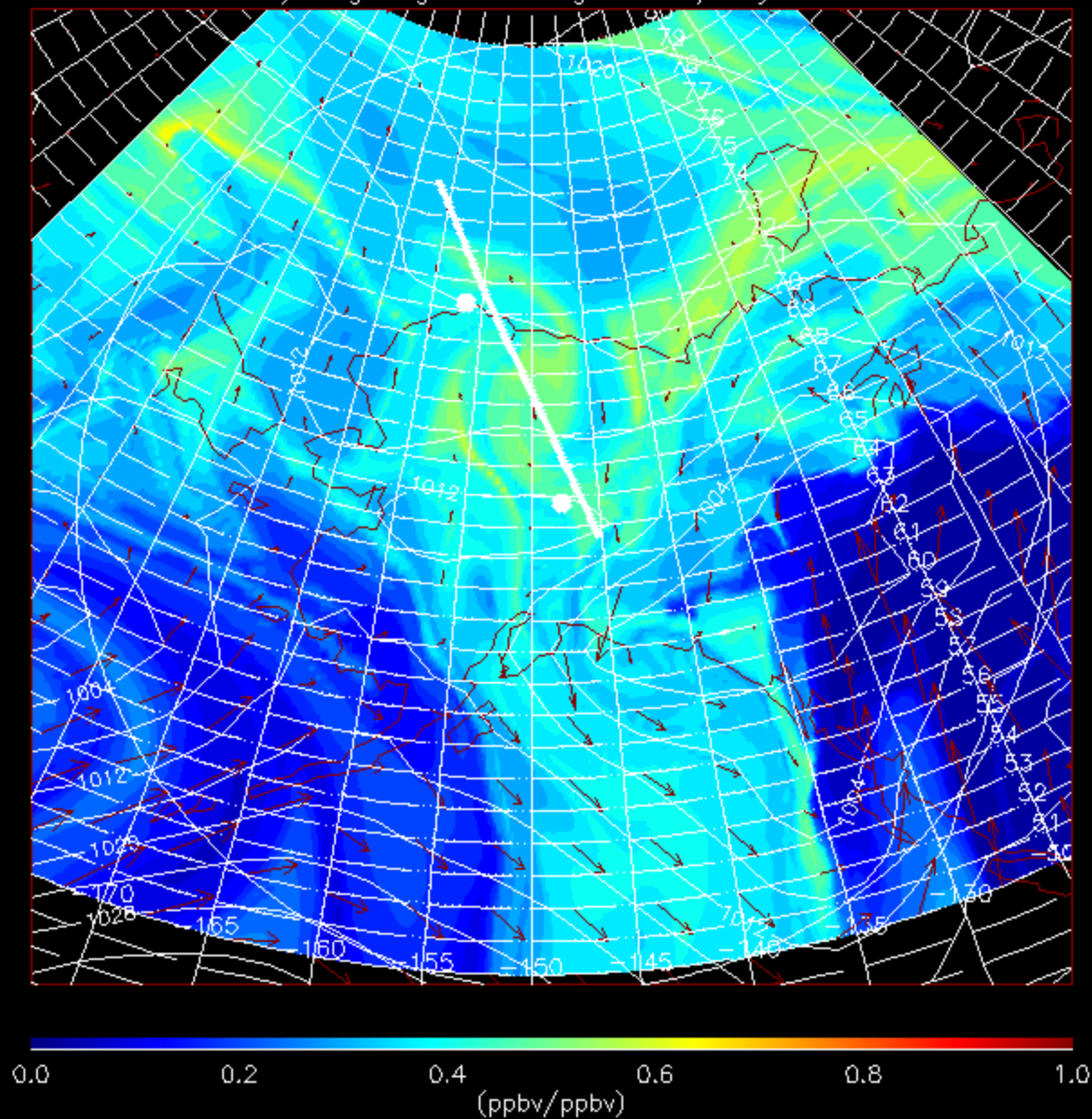


## 3km 5-day Lagrangian Averaged PAN/NOy 2008041300



# 1km RDF PAN/NO<sub>y</sub>

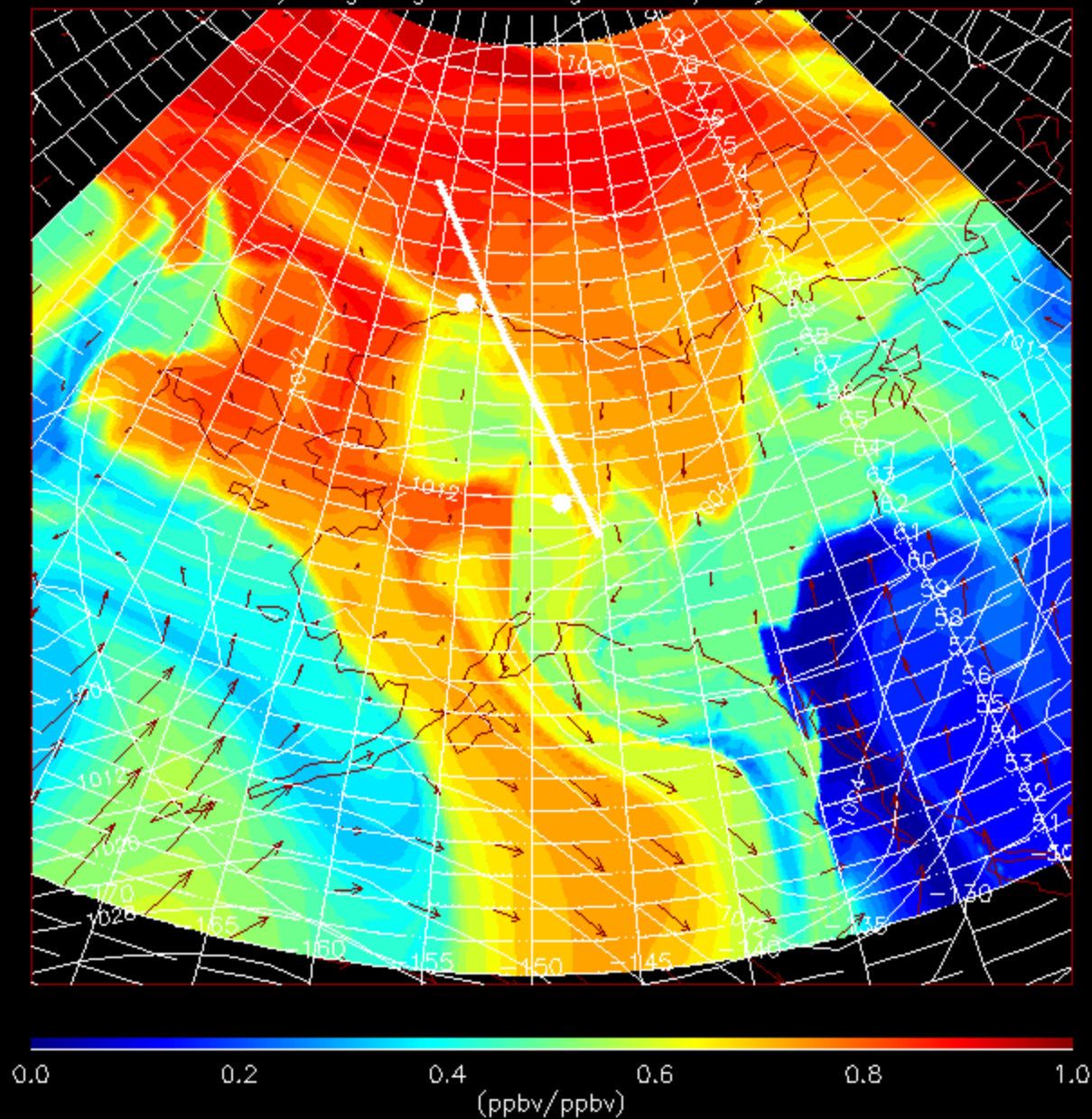
1km 5-day Lagrangian Averaged PAN/NO<sub>y</sub> 2008041300





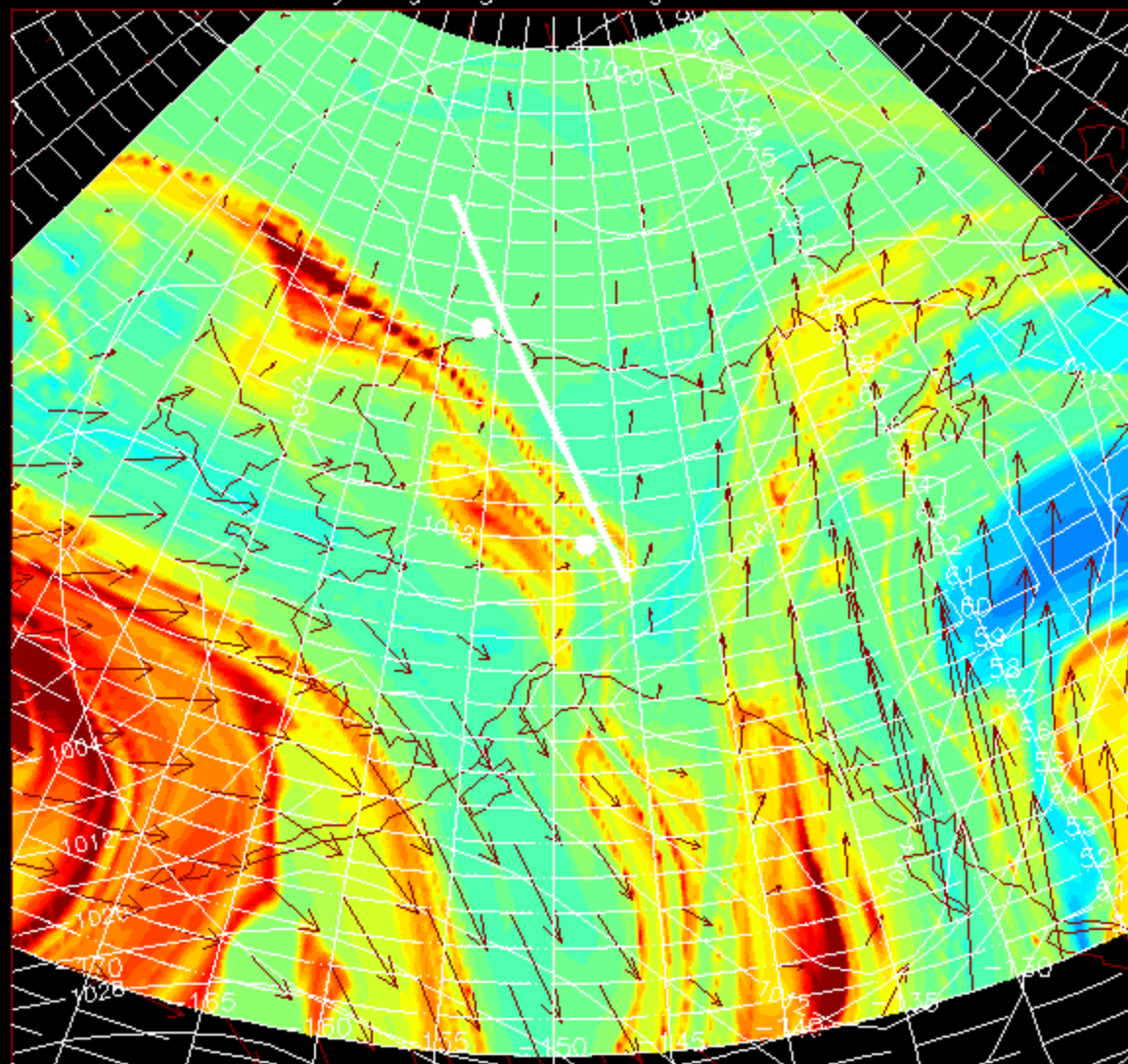
# SFC RDF PAN/NO<sub>y</sub>

SFC 5-day Lagrangian Averaged PAN/NO<sub>y</sub> 2008041300



# 5km RDF CO

5km 5-day Lagrangian Averaged CO 2008041300



100

120

140

160

180  
(ppbv)

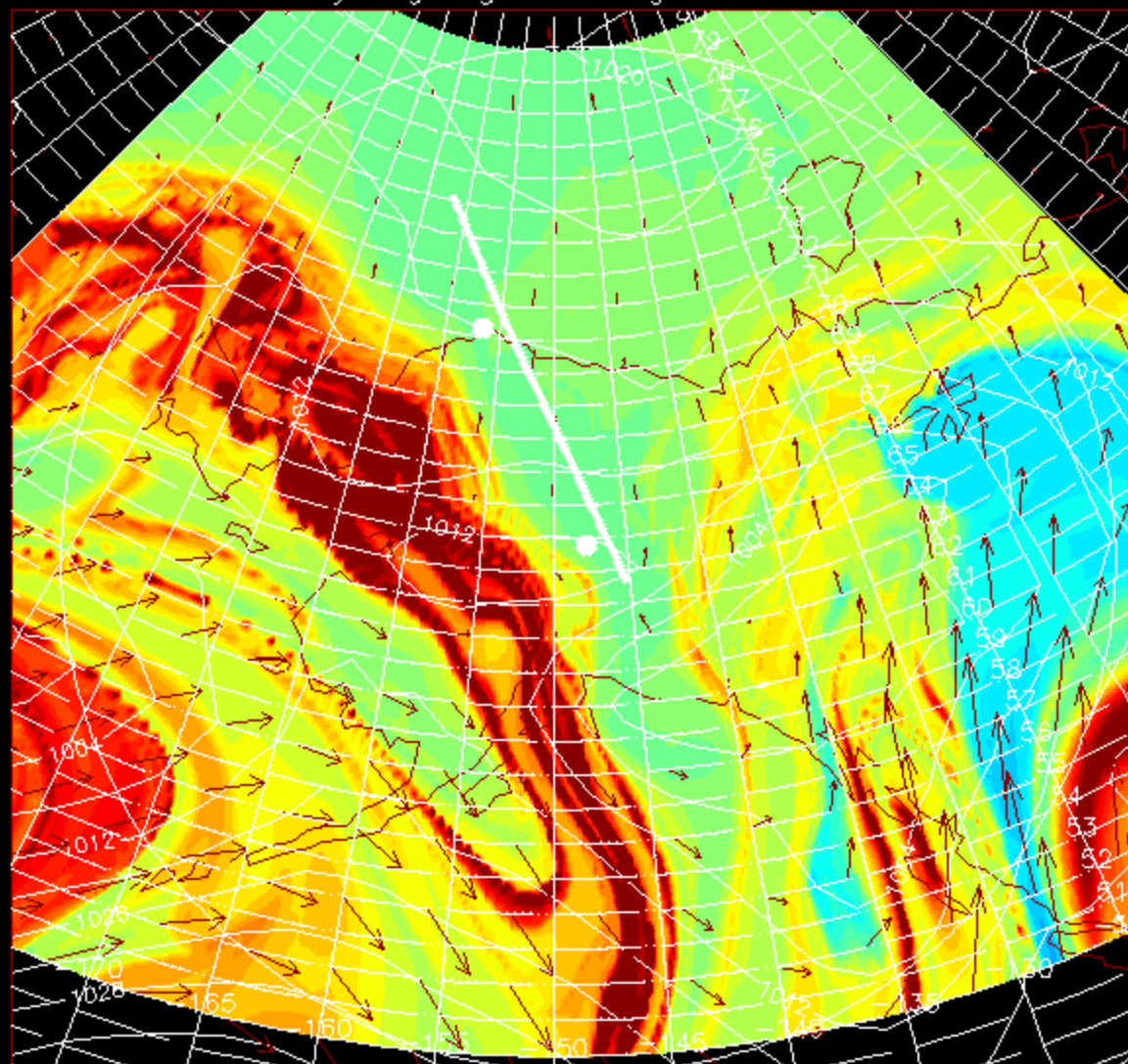
200

220

240

### 3km RDF CO

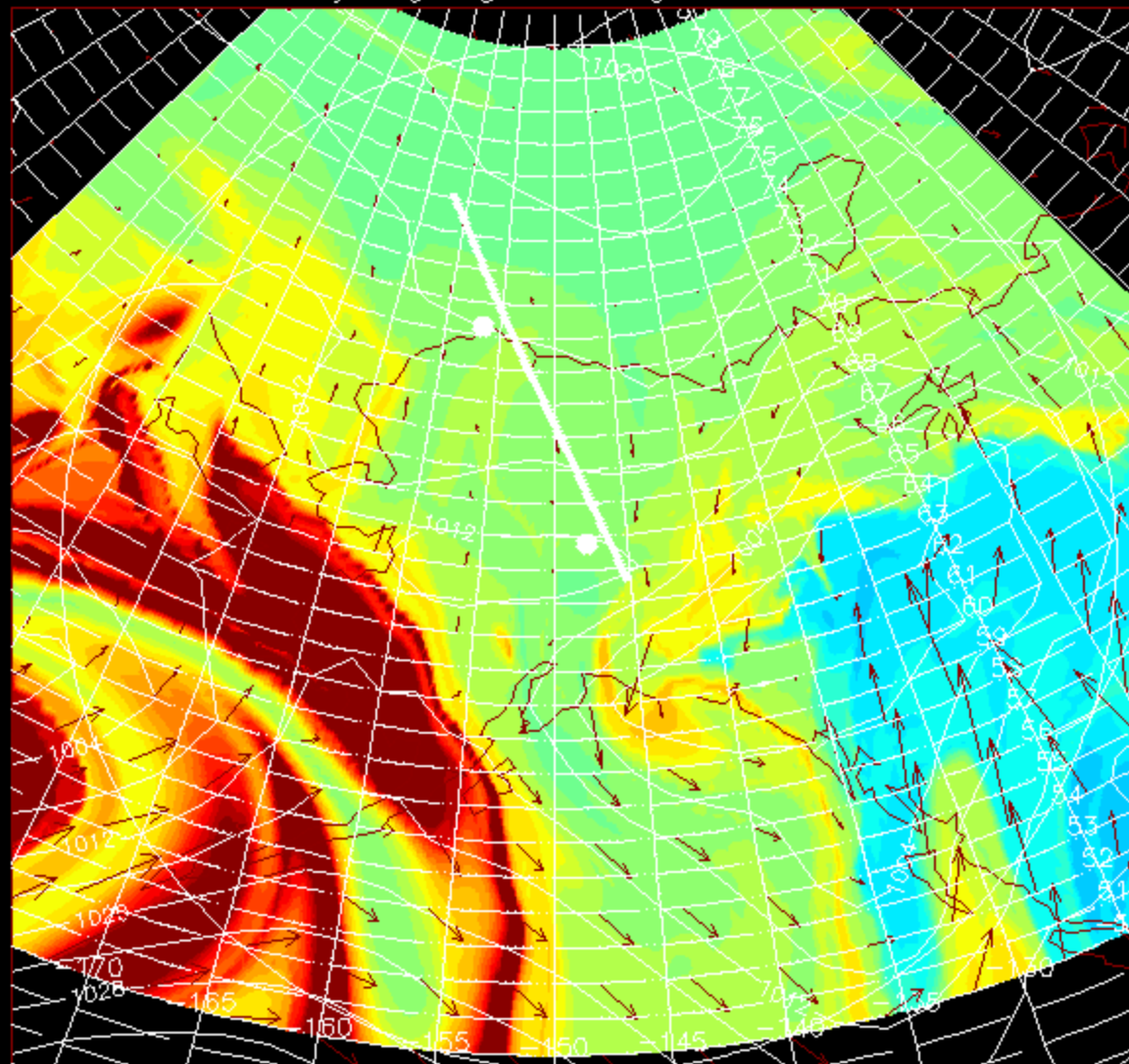
3km 5-day Lagrangian Averaged CO 2008041300



100 120 140 160 180 200 220 240  
(ppbv)

# 1km RDF CO

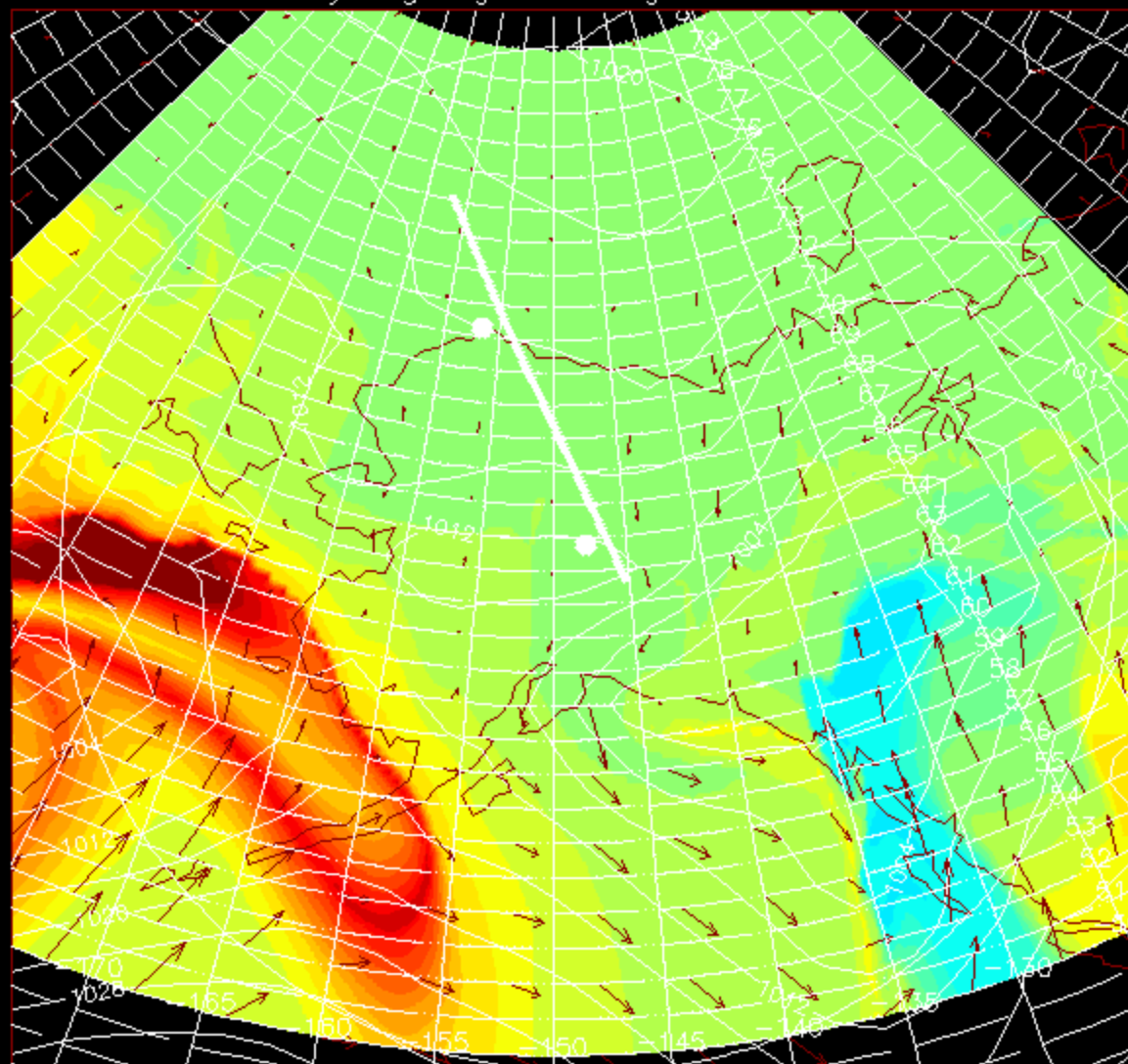
1km 5-day Lagrangian Averaged CO 2008041300





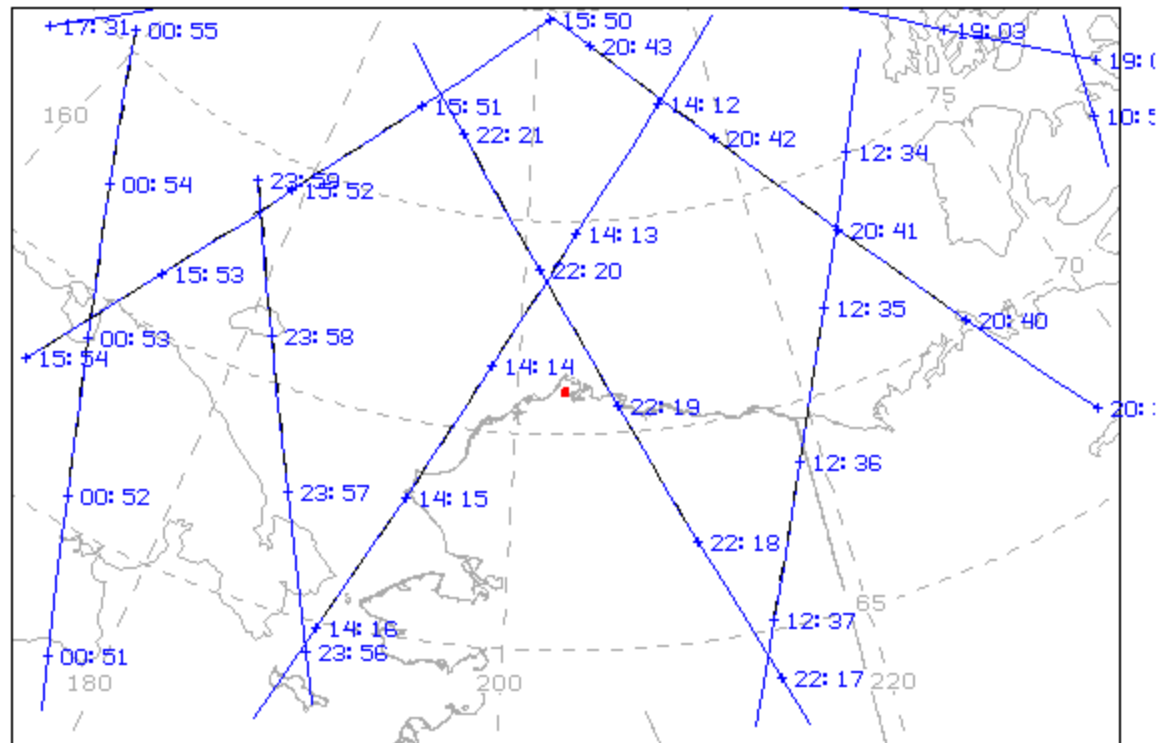
# SFC RDF CO

SFC 5-day Lagrangian Averaged CO 2008041300



100 120 140 160 180 200 220 240  
(ppbv)

## CALIPSO: 04/12/08 (Saturday)



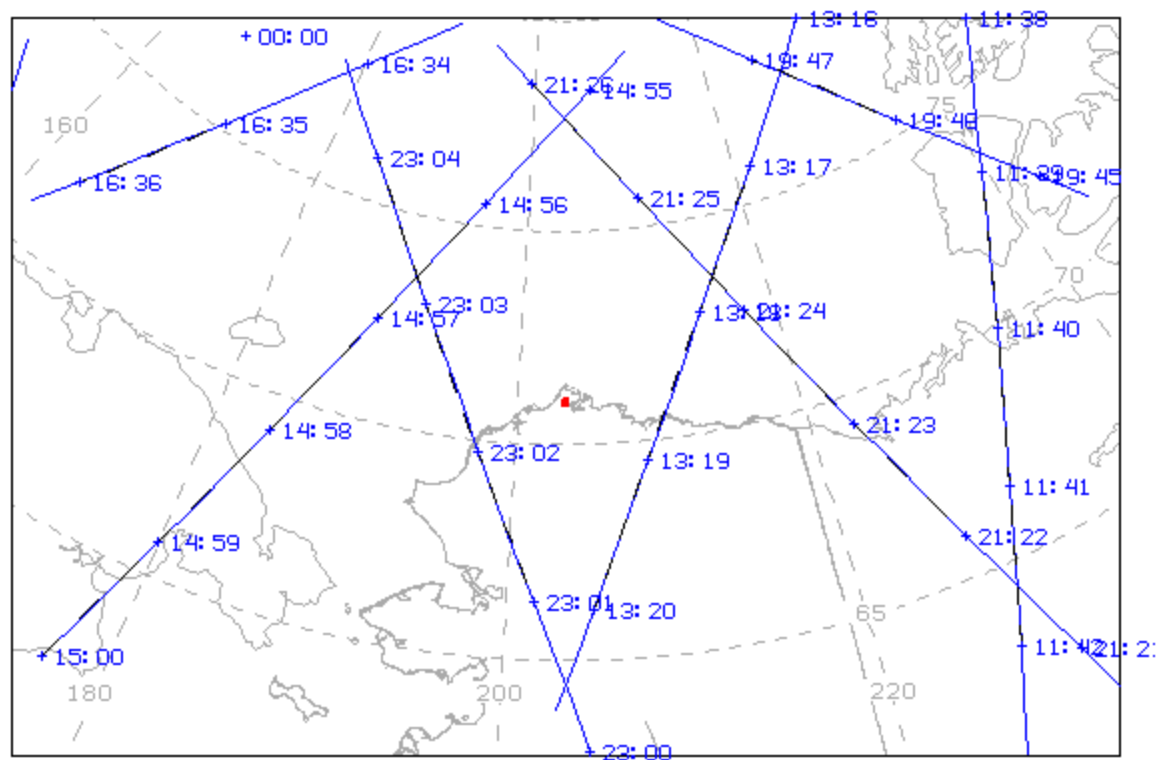
CALIPSO 2008/04/12 UTC

CALIPSO ORBITAL PREDICT PLOT

EPOCH DATE: 08/04/11

■ lat: 71.333 lon: 203.334 res: 9 km

## CALIPSO: 04/13/08 (Sunday)



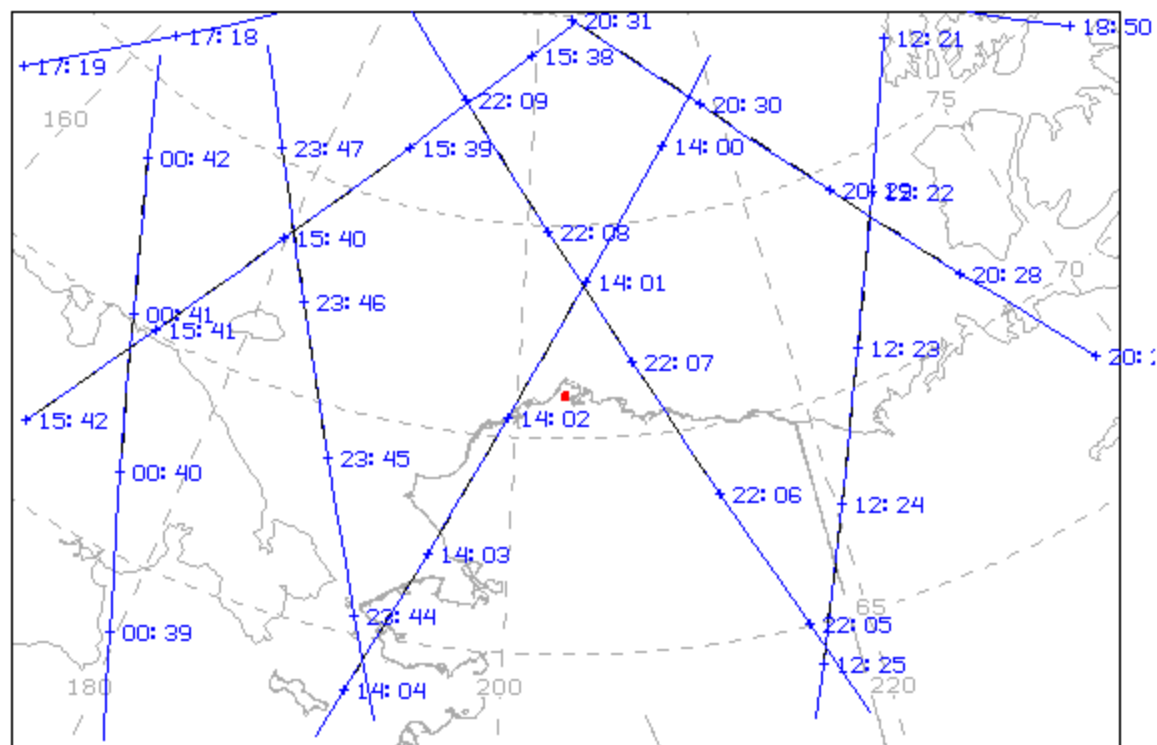
CALIPSO 2008/04/13 UTC

CALIPSO ORBITAL PREDICT PLOT

EPOCH DATE: 08/04/11

■ lat: 71.333 lon: 203.334 res: 9 km

## CALIPSO: 04/14/08 (Monday)



CALIPSO 2008/04/14 UTC

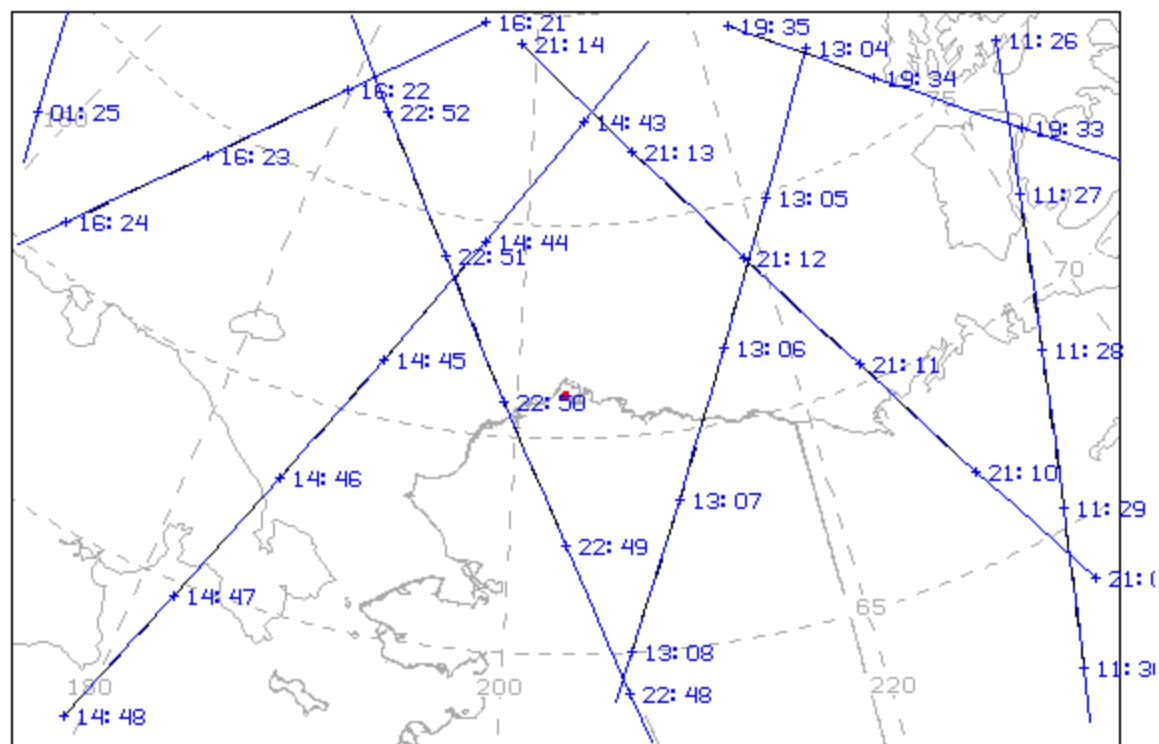
CALIPSO ORBITAL PREDICT PLOT

EPOCH DATE: 08/04/11

lat: 71.333 lon: 203.334 res: 9 km



## CALIPSO: 04/15/08 (Monday)



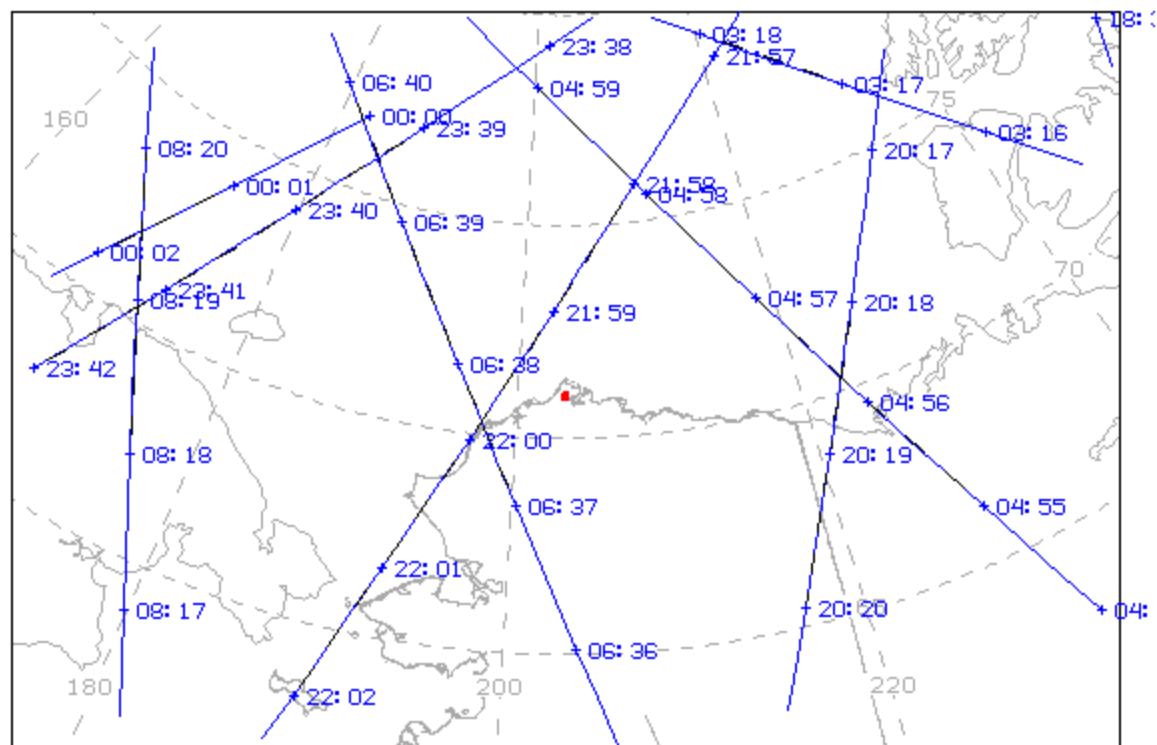
CALIPSO 2008/04/15 UTC

CALIPSO ORBITAL PREDICT PLOT

EPOCH DATE: 08/04/11

lat: 71.333 lon: 203.334 res: 9 km

## METOP-A 04/12/08 (Saturday)



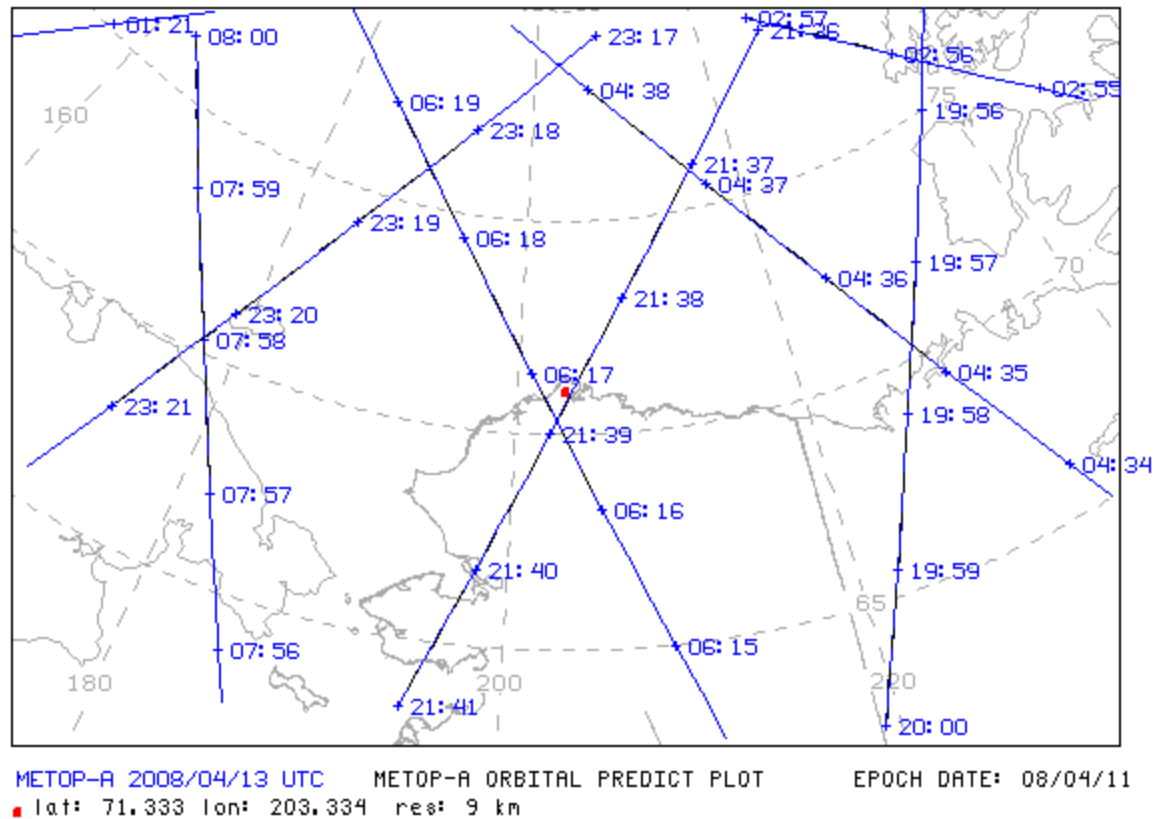
METOP-A 2008/04/12 UTC

METOP-A ORBITAL PREDICT PLOT

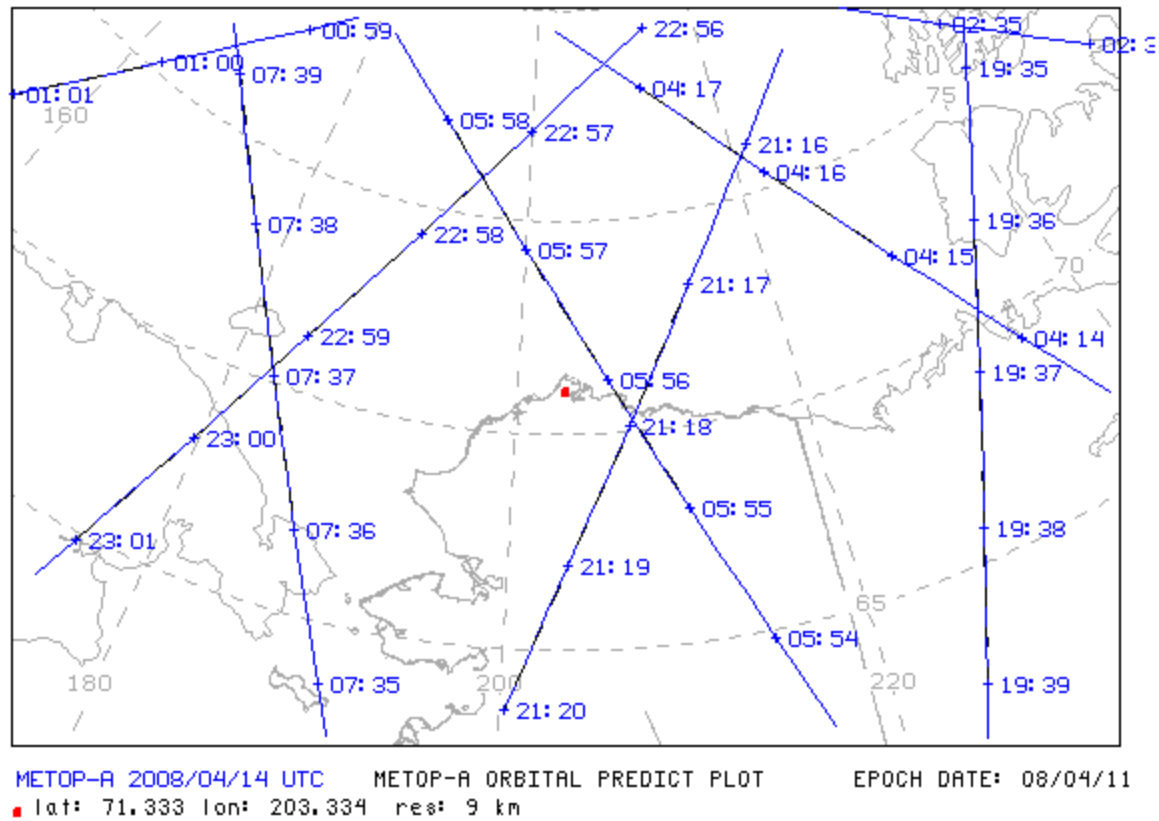
EPOCH DATE: 08/04/11

■ lat: 71.333 lon: 203.334 res: 9 km

## METOP-A 04/13/08 (Sunday)

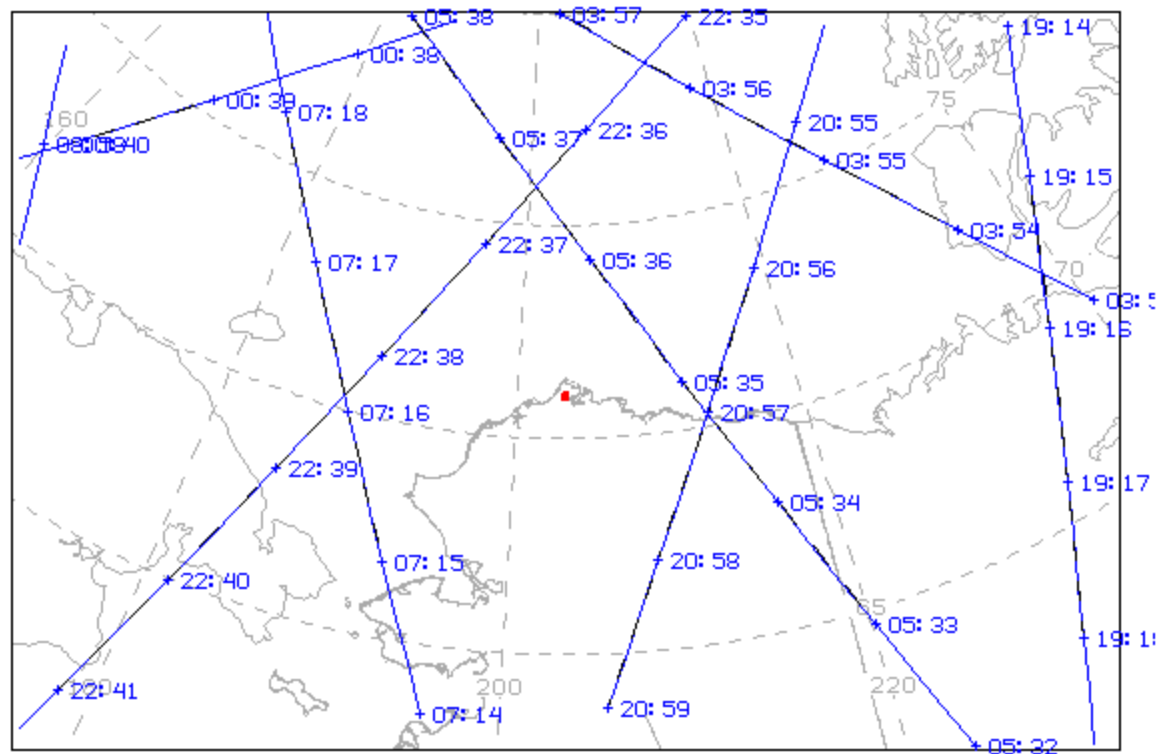


## METOP-A 04/14/08 (Monday)





## METOP-A 04/12/08 (Tues)



METOP-A 2008/04/15 UTC

METOP-A ORBITAL PREDICT PLOT

EPOCH DATE: 08/04/11

lat: 71.333 lon: 203.334 res: 9 km